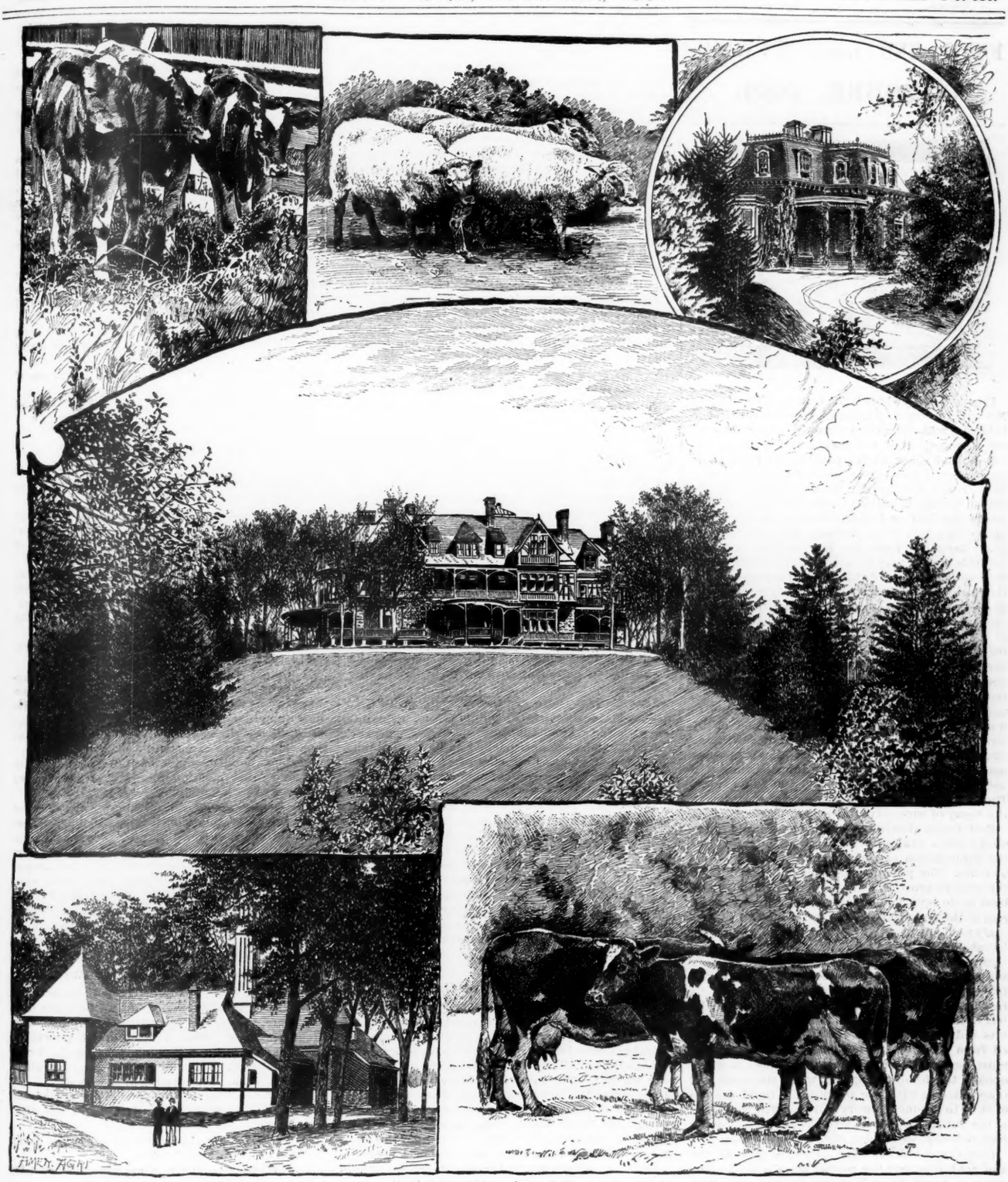
# AMERICAN AGRICULTURIST

FOR THE

FARM · GARDEN · & · HOUSEHOLD

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

VOLUME XLVIII.—No. 10. NEW YORK, OCTOBER, 1889. NEW SERIES—No. 513.

VICE-PRESIDENT LEVI P. MORTON'S HOME ON THE HUDSON.—(*See Page* 477.)

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### October.

The distant hills are crowned with purple mist,
The days are mellow, and the long, calm nights
To wondering eyes, like weird magicians show
The shifting splendors of the Northern Lights.

The generous earth spreads out her fruitful stores,
And all the fields are thick with ripened sheaves;
While in the woods at Autumn's rustling step
The maples blush through all their trembling leaves.

ALBERT LAIGHTON.

# FARM AND GARDEN WORK

## OCTOBER, 1889.

AMER. AGRI. J. BONNELL

Ripeness everywhere is the feature of the month. Not only among crop plants, but in the woods, the thickets, and everywhere among wild plants, we see ripeness. It is not only in the fruits, seeds, tubers, and other useful plants, that ripeness is shown; even the leaves finish up their season's work, ripen, and prepare to fall. All through the season the leaf holds fast to the stem; in its axil, or where the leaf or leaf-stalk joins the stem, is a bud. This bud is to continue the growth next year; the office of the leaf is to nourish and protect this bud; it may be a leaf- or fruit-bud. When the leaf has perfected this bud, it prepares to fall; the line of separation appears, a skin is formed so as not to leave an open wound, and in due time the ripened leaf falls to the ground. In the course of the season the leaf has gathered valuable matter from the soil, which by its decay it returns to the earth. This wonderful work is going on unnoticed, not only on the fruit-trees and vines, but wherever there are leaves. Ripe leaves are of great value, and a careful farmer will prevent their going to waste in the road, or their being carried off by streams, but gather them that their fertilizing properties may be placed where they are most needed. As bedding for farm animals, they will become mixed with manure and add to its value. The well-known richness of wood-earth is due to the decay of successive deposits of leaves.

*Root Crops.*—Parsnips, beets, turnips, etc., etc., afford other examples where parts intended for the propagation of the plant are directed to our own use. The parsnip passes its first season from the seed in growing a large root, which it is enabled to do by a low, broad tuft of leaves. If the root of the parsnip be left in the ground all winter, early next spring it will produce a tall stalk with broad clusters of flowers which will produce and ripen seed. This growth of seed-bearing stems is supported by the nourishment accumulated in the root the previous summer, and the root will be rapidly exhausted. Parsnips, being hardy, may be left in the open ground all winter, but beets, carrots and rutabagas must be taken up and protected from the frost, and in order to produce seed must be planted out when the weather is warm enough the following spring, when the same will take place as with the parsnip. A rapid growth of stem to produce flowers and seed will be formed at the expense of the nutriment contained in the root, and deposited there the previous season.

*Late Crops.*—Many farmers think that August and September are the proper months to sow rye. Sown at these times it gives cuttings for soiling in the fall. If sowing has been neglected, it is regarded by some good farmers as an advantage to sow rye in the fall, even as late as November, or as long as the ground can be worked. The grain sown thus late does not sprout in the fall, but starts very early in spring, and the crop is much earlier than from any spring-sown seed.

*Repairs to Farm Buildings.*—Do not wait until cold storms point out where repairs are needed. Make them at the first opportunity, and if an opportunity does not occur soon, make one. A large share of the food of an animal is expended in producing heat. If we keep the animal warm by other means, the food goes toward fattening it.

### Live Stock Notes.

*Shelter in Pasture.*—We have often urged the need, in a treeless pasture, of some shelter to afford the animals protection from the excessive heat of the sun. If this shelter be of a more permanent character, with a roof and sides, it will break the force of a driving storm. The cold storms at this season are especially injurious to young animals.

*Horses* should come into winter quarters in good condition, and should have extra food. Many continue to turn out their horses until much later than this, when one cold, stormy night will cause them much discomfort, when caught out in a driving storm. As soon as they are home rub them dry, and blanket, giving some extra feed.

*Cows* require care to prevent them from falling off in the quality or quantity of their milk. Bran, ground oats, flaxseed meal and cotton-seed meal are among the kinds of food that increase the quality of milk.

*Pigs* should be kept in growing condition and fattened early. City buyers like small pork.

*Poultry.*—Eat or otherwise dispose of old stock, and select good layers and give them warm winter quarters and abundant food.

### Orchard and Fruit Garden.

*Winter Apples.*—Many fruit-growers find, when their orchards come into bearing, that they have planted too many varieties which ripen at the same time. It is a mistake to set many new varieties in an orchard planted for profit. There are enough of well-tested marketable kinds. Any experimental planting should be done on a small scale. A large number of kinds, ripening at the same period, will result in having numerous small lots. At first there will not be enough of some kinds to fill a barrel; two kinds should never be mixed in one barrel, and these fruits must be used at home. For late apples we may have varieties of the colors, red, yellow and green. The retailer knows that the color of a fruit affects its sale. Trees will be selected and ordered this fall, and these points should be borne in mind, as they will have an influence upon the ultimate success of the orchard. In gathering apples, pick and handle them gently.

*Late Pears.*—There are but few late pears that are profitable, because the public are not acquainted with the Anjou, Clairgeau, and a few others. Carefully selected and packed in boxes holding but a single layer, these may often be profitably disposed of at the confectionery and the fancy fruit-stores.

*Planting of Trees*, both fruit and ornamental, grapevines, etc., may continue as the weather will allow and the soil is in proper condition.

*Pruning.*—If orchard trees have been properly cared for from the first, there will be but little pruning needed, and it matters not much at what time it is done. Grapevines, currants and gooseberries may be pruned soon after the leaves have fallen. Blackberries and raspberries should be pruned by cutting out the old canes as soon as the fruit is gathered.

### Kitchen and Market Garden.

The market-gardener, who has large quantities of roots to preserve, if not through the winter, at least as far into that season as possible, has an admirable method with trenches, which preserve the roots, etc., but allows them to be taken out as they are wanted. The family gardener, who has not large quantities to preserve, finds it the least trouble to store them in the cellar of the dwelling, his chief fear being whether the presence of a furnace may not make the cellar too warm for the purpose, and not whether the presence of a mass of vegetables or fruit may not render the rooms above unfit for dwelling. Vegetables and fruit, when they have ceased growing, commence to decay. In the process of decay there is given off more or less carbonic-acid gas; a deadly poison to animal life, if present in large quantities; in small quantities it is injurious, especially to delicate persons. With these articles in the cellar the danger is always present, but only one of degree. Absolute safety is only secured by avoiding the cause. It is not difficult to make a cellar under an outbuilding, or in a bank; a trench with a roof of boards, and the use of an abundance of litter. For small quantities, an outcellar may be made by sinking an old cask, and providing it with a tight-fitting cover. It should not be far from the kitchen door, and be sunk to within a few inches of the top edge. Place the roots in this, cover them with leaves or litter, throw over a sack, put on the cover, and there will be as good a frost-proof preserver as need be. After a heavy fall of snow shovel a passage to it before thawing and freezing take possession.

*Sweet Herbs*, such as thyme, etc., should be cut before hard freezing, made into convenient bunches, and hung in the shade to dry.

*Celery* should be "handled," the stalks be brought into an upright position and held there by pressing some earth closely around them.

*Squashes* are injured by a slight frost. If frost is feared, gather up the squashes carefully, without bruising, into a heap, and cover with the vines, or, if these are not sufficient, use cornstalks. Late squashes, even if quite green, are very good for the table. On a dry, warm day, take up the ripe ones, and store in a warm place. A closet near a chimney keeps them well.

*Lima Beans.*—If they ripen faster than they are used, pick and shell for winter use. If frost is threatened, take up the poles with the vines, and store under cover.

*Tomatoes* may be taken up by the roots and hung up in a greenhouse or other shelter, where many will finish ripening.

*Sweet Corn.*—Continue to dry for winter use if there is more than can be used fresh.

*A Bite for the Cows.*—Sow rye on all vacant land in the garden.

### Flower Garden and Lawn.

Do not mow the lawn too closely at the end of the season. A good length of grass will be of use as a mulch.

*Cannas.*—The advice to cut away the tops as soon as the frost has killed them is erroneous; unless the tops are cut at the least indication of frost, the roots are very difficult to keep.

*Hyacinths, Tulips*, and other Holland bulbs, should be planted as soon as they can be obtained. Narcissus of the Polyanthus section are of uncertain hardiness, and a good layer of litter will make them more sure.

*Tuberoses* too late with their bloom may be potted to finish in the window or greenhouse.

*Gladiolus.*—Take up the bulbs when the flowering is over, unless it is wished to ripen seed, when they may be left later. Most of the fine sorts produce numerous bulblets at the base of the large bulbs. Save these carefully, and label them, as they come true to name, while seedlings do not.

*Cuttings* should be made of Heliotropes, Geraniums and other bedding plants that have grown too large to be taken up.

*Ornamental Shrubs.*—In soil where water does not stand in winter, this month is an excellent season for planting ornamental shrubs. For a small collection the following kinds are among the very best: *Weigela rosea, Viburnum, plicatum*, Japan Quince, Golden Bell, *Hydrangea paniculata*, various Spireas, *Deutzia crenata* and *gracilis*, Flowering Currant, Calycanthus, Forsythia or Golden Bell, Rose of Sharon, single and double, Japan Judas tree, Purple Barberry and White Fringe tree.

### Greenhouse and Window Plants.

All should be in readiness in both greenhouse and window to allow the plants to be taken in at any time. Have the plants in readiness also. Clean the pots, removing the green growth on their exteriors by scrubbing with sand. Repot those which need it, and it will improve all to have a good surface-dressing of fresh soil.

*Bulbs* for winter blooming may be potted and placed in a dark place until the pots are filled with roots.

*Hanging Baskets* should be filled but not taken indoors until well established.

*Sow Annuals* to secure a supply of flowers for cutting.

*Supplies.*—Secure the materials required for use during the winter; potting-soil, sand, peat or wood's earth, pots, etc. For the window garden, a light cellar is a capital "annex," both as a potting-shed and a storehouse for plants at rest.

## DISEASE IN FARM ANIMALS.

We should endeavor to prevent the appearance of disease, rather than to cure it after it has come. Sanitation, not medication, is what will reduce disease among farm animals to the minimum. Disease is by far the more common among swine than among other farm animals in this country. Annually above ten per cent of our swine die of disease. Yet there are men who have raised swine extensively for fifteen to twenty years with as little disease among them as among the best-kept horses or cattle. These men have reared pure-bred swine, and some of them are in the region where corn is largely fed. It cannot, therefore, be said that so much disease among swine is due to in-breeding, or wholly to the large feeding of corn. There is no reason why swine should be more subject to disease than other farm animals. The fact that they are, is because they are treated differently. Their quarters are allowed to become more filthy; they are given drink that other animals would not be expected to use; their feed is thrown in the mud and their own manure; and their shelters are of the poorest description and devoid of all means of ventilation. The men who have raised swine with little disease, have given their swine pure drink, a variety of clean, wholesome food, comfortable, well-ventilated shelters and clean, dry quarters.

It must not, however, be inferred that there is among other farm animals no more disease than there should be. If more care were taken to provide sheep, cattle and horses with only healthful food, drink, shelter and surroundings, it is safe to say that there would be much less disease among them. The investigations of European veterinaries, and of Drs. Law, Grant and others in this country, have shown that bovine tuberculosis is most prevalent among cows kept in damp, foul, unventilated stables, or upon wet land where the air and food are contaminated. In other words, sanitation and hygiene are opposed to bovine tuberculosis. Nor is this disease an exception. Sanitary measures are the best preventives of every disease afflicting our farm animals.

The preponderance of evidence is that swine-plague, bovine tuberculosis, foot-rot, glanders, etc., are produced by a microbe, although the germ theory of disease is disputed by some. However, it has been established without doubt that those conditions which are unwholesome to higher animal life are most favorable to the microbes which are supposed to produce these diseases. Thus, these microbes flourish in water contaminated with decaying organic matter, or in damp, decomposing litter; and while they are not introduced into the system through pure drink or food, they are introduced through foul, dirty drink and food oftener than by any other medium.

The measures recommended for the prevention of disease would also be desirable were no disease to be feared. It is firmly established that animals in low bodily condition are more subject to disease than vigorous, thrifty animals. That which makes the farm animal thrifty and vigorous, and therefore less liable to disease, also makes it profitable. The more wholesome the food, drink and surroundings of the animal, the stronger its appetite and the more thorough its digestion. It eats well, the excess above the food of support is at the maximum, and as this measures the gain, the profit is large. As digestion is vigorous, the amount of food which escapes assimilation is reduced to the minimum. Where "poor condition" is not allowed to exist, disease is scarcely known, and at the same time the animal makes the largest return for the food consumed. While we have need for a hundred veterinaries to each one we now have, their work, as that of the physician of the human body, will be largely in teaching sanitation.

## TREATMENT OF MILCH COWS.

GEORGE E. NEWELL, NEW YORK.

Nearly every dairy has its quotum of kicking cows, and every cow in the land is liable to switch her tail across a milker's face during fly time. The human irritation aroused thereby rebuts on the herd, to its positive injury. There are two classes of kicking cows—those habitually inclined that way, like a balky horse, and those that only use their rear hoofs in an offensive manner to resent fancied or real provocation. Nothing but the gentlest and kindest treatment should rule in the dairy; so, to cure a cow of this disagreeable habit, a brusque manner should be avoided. To milk an inveterate kicker, treat her as you would a heifer. Give her no chance whatever to use her heels. Put a broad strap around her hind legs over the gambrels, and, drawing them snugly together, buckle it tight. Place her in a stanchion next to the wall, and from a ring in the latter let a long strap depend, which, after passing around her right flank, draw taut to the stanchion braces near her head. The cow is then practically helpless so far as any vicious manifestations are concerned. Sit down quietly to milk her, and speak soothingly and reassuringly. If the cow struggles to free herself, calm her fears by a gentle pat of the hand and a persuasive tone of voice. Milk her in the same place and under the same restraint day after day, and in a few weeks or months she can be cured of kicking. The meekest cows sometimes temporarily contract the habit of kicking in defense of abuse from some senseless milker. Treat them impassionately and be perfectly indifferent to their tendency to be light heeled. In a very short time they will be permanently cured. If cows switch their caudal appendages in your face in an attempt to brush off flies, don't amputate the offending members, as some do, but affix to the side of the milking stool a short strip of tough wood, divided by a spring slit, after the manner of a strictured clothes-pin. Have the opening of the slit turned backward, and into it; when sitting down to milk, draw the brush of the cow's tail. Cow's tails should never be cut off, as it is a wicked, brutal custom, depriving the animal of its means of self-defense against insects. Humanity and kindness go as far in making a dairy profitable as nutritious food.

## THE WHEAT CROP.

PROF. J. W. SANBORN, MISSOURI.

For several years, acting as secretary of the State Board of Agriculture, I gathered the crop statistics of Missouri, and had opportunity to watch the decreasing area of wheat, which went down from seven to ten per cent yearly, for some three years. This movement had its origin in and continued in the conviction that wheat at the prevailing price of about sixty cents per bushel in the interior of the State, did not pay for raising. So far as I can now see, this movement has entirely ceased. This is not because there is more satisfaction with the remuneration of wheat-growing, but because the re-adjustment of crop balances or areas on the farm and general changes of prices has brought our farmers to the conviction that on the basis of the present crop areas, wheat is as profitable as other crops. More than any other factor, the change of price of cattle has tended to cause a halt in the reduction of the area of wheat. The grass area increased with the decrease of the wheat area, which means that a gradually increased attention was being given to cattle. But to-day no producers of the West are more disgusted than cattle-growers. The revulsion in cattle prices has brought the remuneration of cattle-growing below that of wheat-growing. The West holds on and is likely to hold on to its present area of wheat through necessity rather than satisfaction. The tendency now will be, and I believe is, to improvement in our methods of wheat-growing. Improvement will be necessary if, so far as wheat is concerned, our farmers are to hold to the present level of their living, for beyond question present yield and present prices are unremunerative, and on this basis must inevitably lower the plane of farm life with us.

Improvement is sought not in radical change of methods but in conservative advances, and often in makeshift ways. Change of seed is sometimes resorted to as an aid, under the belief that the sorts grown have deteriorated. I am not infrequently asked to furnish seed to parties affirming that theirs had run out. I always look upon it as a probable indication that the farmer has in a measure run out, or in other words, it is almost a sure indication of poor farming. Our lands naturally, as statistics show, become exhausted and the crop gradually becomes reduced in yield. This is often mistaken for the running out of wheat. The fall wheat the first three years that I grew it in Missouri yielded 16½ bushels per acre, and for the next three years 39 bushels per acre. This change was not in the seasons but in the methods of farming, the crop advance being a continuous one. A complete reorganization of the system found in vogue alone lifted the level up. Without going into the matter fully now, I will for the present only touch briefly upon the seed question.

I do not believe in seeds running out. I do not know how it will apply to cuttings, such as is the case with the potato, which is not seed. I would not affirm that potatoes do not run out. Seed will, without doubt, adapt itself to conditions—to what is known as environment. If the conditions surrounding seed grow more unfavorable, the crop will decrease and the seed will give evidence of decreasing vitality. If the conditions grow more favorable I look

for the seed to increase in potency and yield. The whole philosophy of seed changes, or change in locality of seed, it seems to me rests right here. The change in the locality of a seed must be, so far as climate is concerned, from the less to the more favorable climate and never the reverse. In the one case improvement will occur, and in the other the reverse.

I planted northern-grown potatoes and oats by the side of Missouri-grown sorts of the same varieties this year, and find so far as indications now [July] go, that the northern varieties are the most productive. Likewise, the oft-repeated advice to change seed with our neighbors will hinge on the same principles before enunciated. Change of seed of the same variety from farm to farm will work well for one party to the exchange, and poorly for the other. I should expect to receive advantage by sowing a wheat grown on a farm richer than my own, and where the wheat actually yielded more than that of my own farm, on the same principle that a breed of steers bred or fed into greater productiveness, like the Shorthorn over the scrub, would have greater powers of growth. On the reverse hand, if I took wheat from a poor farm where it had been fed down to a low limit of yield, I would expect, like a stunted race of men, this effect to be for a while manifest.

## SEA-WEED AS A FERTILIZER.

A. S. HEATH, M. D., NEW YORK.

Potatoes fertilized by sea-weed produce a large crop of tubers, free from grub-eaten spots. The salt of the green weed is poisonous to the grub, so injurious to the potato crop over a large part of the country. Then the potato blossoms are picked off and the stalks and leaves are kept fresh and green, yielding nourishment to the roots and furnishing valuable green manure for a future crop. The leaves, it will be remembered, absorb from the atmosphere the carbonic acid, of which the starchy matter chiefly makes up the bulk of the potato.

AVERAGE COMPOSITION OF THE POTATO.

| | |
|---|---|
| Water | 75 |
| Dry nutritive matter | 25 |
| Total | 100 |

Of the latter, there is:

| | |
|---|---|
| Starch or pectose | 62 |
| Sugar and gum | 15 |
| Protein compounds | 9 |
| Fatty matter | 1 |
| Cellular fibre | 9 |
| Mineral matter | 4 |
| Total | 100 |

The sea-weed is rich in protein, containing from 20 to 25 per cent. It is from this fact that pigs and fowls greedily devour fresh sea-weed, and especially the rock-weed in it, which is very rich in protein. Did the farmers generally of the south side of Long Island know the remarkably fertilizing properties of sea-weed, as do most of the European seaside farmers, they would save half of the expense they now are compelled to incur for manures. A load of sea-weed is worth as much as a load of New York manure, and it is conceded that New York city manure is super-excellent, because of the high feeding of city horses. We prefer half sea-weed added to an equal quantity of barnyard manure for general crops. But for potatoes, three-quarters of the former to one-quarter of the latter is preferable. This last combination is especially recommended for asparagus, which was originally a seaside plant.

The compost of sea-weed, hen manure and barnyard manure, where the cows are bedded with oak leaves, forms an admirable fertilizer for cabbage. Equal parts of sea-weed (this includes, nearly always, rock-weed, sedge and other vegetable, and much animal matter and shells) and barnyard manure profusely applied to land to be laid down with a full and free seeding with clovers and several of the meadow grasses, prolong paying meadows for a number of years.

The free use of sea-weed manures aerates and loosens the soils, lessens leaching and drying, and furnishes an abundance of carbonic acid gas for absorption by the leaves of all kinds of crops. But especially sea-weed retains the ammonia in the decomposition of the animal matters and the liquid animal manure that would otherwise escape into the atmosphere and be lost to our crops.

As it is unhealthful to store vegetables in the cellars of our dwellings, the writer has built a temporary cellar, covered two feet thick with freshly-gathered sea-weed. This preserves the vegetables during winter and late spring in a fresh and sound condition safe from frost. When taken from the cellar they look as fresh as when first dug in autumn. The size of the cellar must be proportioned to the quantity of the root crops grown. A frame of four-by-four-inch scantling is laid upon the ground, with posts of the same and four-by-six-inch plates. Rafters are put up to give eight feet high in the center, using all sorts of odds and strips of waste boards to cover and board close enough to prevent sea-weed from falling through. Then a two-foot wall of fresh sea-weed is laid up compactly on all sides, including roof. An eight-inch chimney of boards is placed in the end of the peak farthest from the door to permit warm air and moisture to escape. A double door filled in with dry sea-weed is hung, opening towards the south. For convenience, the door should be three by six feet, so that a man can wheel a barrow through it. Convenience is economy. Drift and sea-weed are used to cover cow sheds and pig sties, and lay up wind-breaks to protect from the chilling east and the keen, biting northwest winds.

Having a convenient creek leading to Hempstead Bay, and a good yacht, the writer, when no other work is driving, makes pleasant and profitable sails, venturing with two big loads for a two-horse wagon with sea-weed, drift, etc., for cellar, hovels, wind-breaks and manure heaps. When in the spring these sea manures have fulfilled their kindly winter service, they are thrown into the open manure depression, where the solid and liquid manures are deposited from the stables. When thoroughly soaked and mixed, the whole is removed to convenient heaps to be forked over for use at any time. In this way a stock of from one hundred to two hundred loads of good, well-rotted and fine manure is collected and can be kept on hand in advance of need. This process destroys the germinating power of seeds of troublesome weeds, one of the serious drawbacks of purchased manures.

Long Island soil, and especially that of the south side, will yield by the free and full use of such manures as large crops as can be grown anywhere. A meadow thus treated with the full use of seeds and manure yielded an average of four tons of good hay per acre the present season. Of course, Nature has this season been kind to prodigality.

## DAIRY FORM AND BEEF FORM.

HIRAM SMITH, WISCONSIN.

In a recent number of the AMERICAN AGRICULTURIST Mr. H. J. Sears says: "An article by Hiram Smith, 'The points of a good butter cow,' speaks about the dairy form and the beef form, without explaining the difference; will you kindly define the difference?" In reply I will say that I cannot define the difference more intelligently nor in fewer words than by calling attention to the many pictures of pure-bred cattle published in nearly every number of the AMERICAN AGRICULTURIST. The Jerseys, Guernseys, Ayrshires and the Holstein-Friesians have the dairy form clearly depicted, in contradistinction to the beef form, as seen in the pictures of the Shorthorn, the Hereford, Aberdeen-Angus and the Galloway. The dairy form, as will be seen, has light, thin hams, so as to leave ample room for a large, capacious udder, which good milkers possess and require, because the feed consumed by an animal having the well-developed dairy form is converted into milk. On the other hand, an animal having the beef form has a large, full loin, heavy, round, plump hams, and usually a small udder, because the food consumed by a well-developed beef animal is converted into beef, and it has some place to store it.

We all know that if we turn into the same pasture a sheep, a pig and a cow with good dairy form and a cow with good beef form, we get as a result wool, pork, milk and beef from the same kind of feed. This is not saying that we would not get some milk and some beef from both cows, but the close observer knows that he could not get milk in paying quantity from a beef cow, nor beef in a paying quantity from the dairy form. Most men's heads are level on other subjects than cows. No horseman worthy of the name would look for a draft horse among the speed form of horses or for speed among the Percherons or Clydesdales. If a man wants a trotting sulky, he does not fool away his time experimenting with a dump cart.

**Fewer Acres and More Crops.**—Many farmers are too much engaged in "carrying coals to Newcastle." Likely they should not change production, but should add to it; produce what they do on fewer acres, and put the gained acres in other crops.

**Water-Gaps.**—Fall is the best season for putting in water-gaps. The best water-gap is made like an inclined railroad guard, stayed to trees or deep-set posts on the banks.

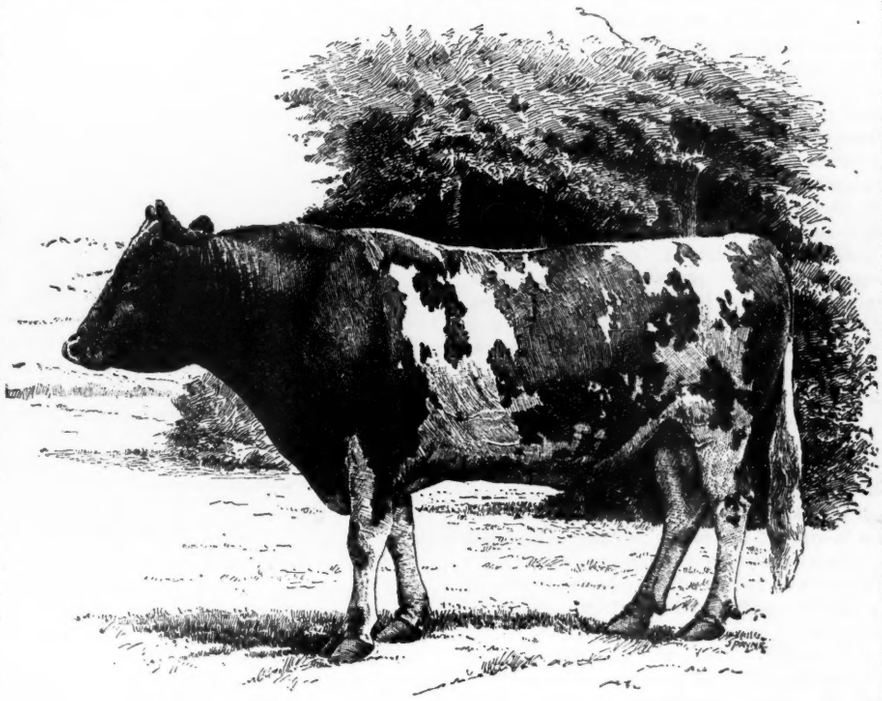
## "ELLERSLIE," THE HOME OF VICE-PRESIDENT MORTON.

Hon. Levi P. Morton has long been in public life, as United States Senator, Minister to France, and now Vice-President of the United States. In business and financial circles he is known as the head of a great New York banking house. With all his political and business cares, he is also a successful farmer, breeder and dairyman. There is no other part of his life which he enjoys with so keen a zest as the days he spends in his rural home. The farm, containing 940 acres, lies on the elevated left bank of the Hudson, at Rhinecliff, a short distance from Rhinebeck. It was formerly the home of Hon. W. W. Kelly, who was, like Mr. Morton, a public man and an enthusiastic lover of rural life. During the sixteen years which intervened between the death of Mr. Kelly and the purchase of the farm by Mr. Morton, in 1887, it had fallen into a very neglected condition. But the new owner at once instituted a vigorous and thorough system of improvement. Manure in liberal quantities was applied to the spots most in need of it. The old dwelling was torn down, and the present mansion erected, together with such outbuildings as were needed. The home grounds were beautified, the roads improved, and much other work projected which will still require several years to complete.

The large picture on the first page of this issue contains partial views of the house and grounds, with a few typical specimens of the stock, after photographs by G. W. Berger. The central view is of the south front of the mansion. The approach to the house is by gracefully winding drives and walks, through grounds laid out in perfect taste. There are no ornate or obtrusive decorations, but simplicity and naturalness are the leading aims. The gardener's cottage, which is shown in the upper right-hand corner of our first page, is in keeping with its surroundings. The principal approach to the house is on the north front, which is not shown in our illustration. A broad hall occupies the entire central portion of the first floor, extending from the north or main entrance through to the semi-circular veranda shown in our engraving. This veranda and all the south windows command some of the most impressive views of the Hudson to be found at any point on the classic stream. Gleaming reaches of water appear here and there between the majestic highlands, down to the airy spans of the Poughkeepsie bridge, sixteen miles away, and beyond to where old Storm King closes the vista. East of the house, with its surroundings of velvet lawns, the slope is well shaded by indigenous trees, which shut out the views of the barns and stables, with their yards below. A short distance down the slope is the dairy and engine-house, shown in the lower left-hand corner of our first page. It contains a centrifugal separator, and all the latest-improved appliances for butter-making; a cold storage room, where the golden butter is kept in perfect condition; a steam-engine of forty-horse power, which drives the dairy machinery; and a dynamo, which furnishes the incandescent lights for the house, barns and outbuildings. The engine also forces water from a well 300 yards distant to a still more remote tank, from which a supply is furnished the mansion, conservatories and outbuildings. Steam from the boiler is conducted to the cattle barns and yards, where it is used in winter to raise the temperature of the drinking water. The stables are neat, warm, and well ventilated, but plain and unpretentious. Such changes as experience dictates are made from time to time. One of the latest of these is a capacious silo in the large bay of one of the barns.

The "Ellerslie" herd of Guernsey cattle is one of the finest in this country. It contains eighty-five head, old and young. The foundation stock was carefully selected on the island of Guernsey, by Hon. E. Burnett of Massachusetts. The aim has been to obtain animals which unite practical dairy value with symmetry and beauty. At the head of the herd is the imported young bull Safeguard, whose portrait appears on this page. His sire was the famous island bull Loyal 2d, and his dam the prize-winner Diss. The herd not only has many animals of the highest individual excellence, but taken as a whole, it shows a great uniformity of type. Representatives of the herd were exhibited last year at the International Fair, Buffalo, N. Y.; the State Fair at Elmira; the Bay State Fair at Springfield, Mass., and the Dutchess county Fair at Poughkeepsie, winning seventeen first prizes, including two gold medals, and twelve second. Lord Stamford, the first prize bull of the Royal Show of Guernsey, has recently been imported and added to the herd.

The dairy is conducted with great care and skill, and the product is unsurpassed in excellence. Fifty-one cows are milked; the cream separated by a centrifugal; the milk is fed to the calves, and the cream set to ripen. When the cream attains the proper stage it is churned, and the butter washed and salted while in a granular state, worked into small fancy balls, and packed for market. A visit to the dairy building would afford many valuable object lessons to any average dairyman. Mr. J. L. Hope, the farm superintendent, is a young man, but skillful and efficient. The Southdown flock is the latest addition to the stock of the farm. The sheep were selected in England, from the Sandringham flock of the Prince of Wales and the Jonas Webb flock. A few typical specimens are shown at the top of our first-page picture. They are shown as they were photographed, soon after shearing. Of the domestic life of Mr. Morton as a farmer, it would be impertinent to speak at length. It is enough to say that it is characterized by quiet simplicity, and that no one who was ever a guest at Ellerslie can forget its refined and hearty hospitality. We draw aside the veil for a momentary glimpse of the domestic life there. Early last June it was observable that the three children—girls from eight to fourteen years old—were deeply interested in some unavowed project, which occupied the greater part of their time from day to day. All was explained when the little girls brought to their father a large quantity of children's clothing, with a request that it should be sent to the sufferers of the Conemaugh flood. The three little daughters had purchased the materials with their own pin-money, and made them up with their own busy little fingers.



THE PRIZE GUERNSEY BULL SAFEGUARD.

**Training Young Colts.**—A weaned colt should be put in training as soon as it is taken from the barn, which should be when it is five or six months old. If the mare has been well fed while rearing the colt she will not suffer in the least from this period of milking, but the colt will gain very much by it. Before weaning, the colt should be used to the halter and be tied in a separate stall when in the stable, to which it should be brought occasionally even while in pasture. Here some bran and crushed oats should be given, and when weaned the ration should be increased from two quarts a day

to four quarts (which will be quite safe for the growing animal), of this food, but no corn should be given until the winter, when a pint to a quart may be added to the feed. Then the real training should begin. The colt should be led by the halter first; then after it has been taught to lead well, a bridle with a smooth bit should be used, and after this has become familiar a harness made for the purpose should be put on it, and the colt taught to draw a light cart or sled. Gradually it may be used to a saddle and to being ridden by a small boy of light weight. During all this time the colt should be tamed and made docile by constant handling and feeding from the hand a little grain, salt and sugar, so that it will come when called and evince no fear of the owner. A horse thus trained will never be vicious nor troublesome unless spoiled afterward.

## MANAGEMENT OF CREAM.

HENRY STEWART.

The management of the cream is the most particular of all the special points in butter-making, both as regards the quantity and the quality of the butter. Sweet cream makes less butter, and that of a less pleasant flavor than soured cream. But if the souring is carried too far the flavor of the butter is deteriorated, as the acidity hastens the production of those volatile acids which when in excess produce that condition which is known as rancidity. It is to the very moderate quantity of these acids in the butter that the pleasant nutty flavor and peculiarly agreeable odor of good butter are due. The proper condition of the cream is called ripeness. The ripening of cream consists in the production of a certain quantity of lactic acid in the milk, of which the larger part—from sixty to seventy-five per cent—of the cream consists. The quantity of acid in the cream should be no more than is sufficient to give it a mild, pleasant-sour taste, and this may be produced precisely by the following methods with shallow or deep cold setting respectively. With the former the milk is set in shallow pans, at a temperature of sixty to sixty-two degrees, in pure air, for thirty-six hours, when it is skimmed, the milk being still sweet or very slightly soured. The cream, skimmed at intervals of twelve hours, is kept in a covered jar at the same temperature, and fresh cream is added to the first skimmings, the whole is gently stirred, to mix all together. At the expiration of thirty-six hours from the first skimming the cream will be in the best condition for churning, and "ripeness," as it is now termed, and for making excellent butter. With the cold water and deep-pail setting the cream is skimmed twenty-four hours after the milk has been set, and is kept in a pail set in the tank at the usual temperature of forty-five degrees until there is enough for the churning, or the cream of each skimming may be churned each day. But the cream must then be ripened before it is churned. This may be done by exposing the cream to a temperature of sixty to sixty-five degrees for twenty-four hours to produce the requisite acidity or ripeness; but this delay may be avoided and the ripening hastened by adding a sufficient quantity of sour milk or buttermilk of the previous day's churning to produce this sourness. Generally one quart of the sour milk to twenty quarts of the sweet cream will be enough for this purpose; the cream being gently stirred so as to mix the sour milk evenly through it. The precision with which this ripening is effected is the main point in making the best quality of butter, and to be sure about it the thermometer should be used to regulate the temperature, and the time should be noted; for temperature and time act together, and one element being in excess the other needs to be reduced to reach the desirable effect. If all the operations of the dairy are performed with precision, the cleanliness of everything used, and the purity of the air being perfectly secured, then the temperature and time may be fixed by rule; if the temperature is increased the time is decreased, and *vice versa;* and thus every time the same results may be reached.

**Hemlock Hedges.**—H. A. Miller, New Haven Co., Ct., writes that he set out a hemlock hedge last year, and that many of the plants have died, and now he would like to know how to proceed in order to replace them and secure a good hedge. The thing to be taken into consideration is the soil, and if it is heavy clay there is little use in planting hemlock, for who ever saw a hemlock forest growing on such soils, unless overlaid with a heavy deposit of vegetable mold? If the soil is loam, or even sand, it is well adapted to the hemlock, and may be enriched, if necessary, by the addition of any old and thoroughly decomposed manure. It would be useless to undertake to set plants in the spaces where others have died out, for it could scarcely be done properly, and the better way is, take up the entire hedge, throw away the dead and feeble plants, and reset the healthy at one end of the line of the hedge, and then fill out with fresh plants of the same size, to be obtained at some nursery. When all are in place, prune away at least one-third of the entire top with hedge shears, and in a straight line on both sides and top. The first pruning of a hedge should be given as soon as possible after the last plant is secured in place, and that is also the time to decide upon the proper form in which it is to be trained, and which should be rigorously adhered to in after years. Evergreen hedges should be trained in a conical form, with a sharp point, in order to prevent the lodgment of snow on the top in winter. The pruning should be done early in spring, or just before the buds push into growth, and at no other time. If large fruit or forest trees are permitted to grow near a hedge, the latter will sooner or later suffer from the crowding of the roots, or shade, and perhaps both. As a rule, no tree of large growth should be permitted within twenty feet of any hedge, and fifty feet would be still better. Plants one to three feet high are large enough to begin a hedge with, and if these have been transplanted once or twice in a nursery, not one in a thousand should be lost when removed to the hedge-row.

## TREATMENT OF CELERY.

G. A. W., PITTSFORD, VT.

Celery, whether self-blanching or otherwise, can be grown with much or little labor, but like other vegetables, the more care that is given, the better will be the result. There is a certain crispness and delicacy of flavor which can only be imparted by banking generously with earth. Previous to banking, some attention is necessary.

Last year I bought a few pounds of straw paper, cut the sheets into ten-inch strips, and wrapped each plant in a paper jacket, then hilled up almost to the top of the papers. After a little practice, this can be done as expeditiously as the ordinary tying up. This wrapping should be done when the plants are perhaps a foot high, keeping the loose end of the paper in place with a handful of earth, thrown on with a garden trowel, until the row is finished. Care should always be taken in hilling up to give a broad base to the hill, as the soil will need to be drawn up higher, later on, if the plants have grown far enough above the paper to make it necessary. Persons raising celery on a large scale, for ordinary market purposes, would hardly care to take this trouble, but if only a few hundred for family use are grown, this plan cannot be too highly recommended. There are two advantages gained by this process: 1. There are no crooked stalks, as is often the case when the plants are tied up. 2. It prevents earth-worms from nibbling the stalks, which they are sure to do in a wet season.

## FALL PLOWING.

Except the lightest sandy soils, all level land will be benefited by fall plowing. When well plowed, and to a proper depth, the plowed ground will not wash even by the heavy Southern winter rains. That the land will leach and lose its fertility is a mistake. Nothing will be lost in any case except the nitrogen, which exists in the form of nitric acid or the most soluble nitric salts, and, as a rule, there is no danger of this because of the almost entire absence of this form of nitrogen in the land. On the contrary, it is for the purpose of developing this scarce plant-food in the soil that fall plowing is desirable. The turning over of the soil aids in the change of the abundant inert nitrogen, which is mostly combined with the carbonaceous organic matter in the soil, into soluble nitrates, and this process goes on slowly during the fall and early spring, and where the ground is not frozen even during the winter. Consequently the land is brought into a more fertile condition by the fall plowing, and besides this gain, there is another of much importance, viz.: the spring work is forwarded so much, and the crops may be put in so much earlier.

**Small Savings.**—A rather irritable farmer annoyed by the fowls on his grain mows, picked up a club and slaughtered a dozen of the hens. To his wife's remonstrance he declared that the fowls were a great damage and of so little value as to be of no account at all. The woman was, however, able to show in reply a goodly roll of bills she had stowed away as the receipts from the poultry and eggs she had sold. Chickens, as a rule, are wasted to a great extent for want of the care that might easily be given to them, and as regards the little food they may steal, this is not one-tenth as much as is stolen by rats and mice without any complaint or notice. Moreover, the waste of small grain and other food that might be turned into products, is sufficient to amount to a very pleasant sum of money every year.

## MODERNIZING AN OLD FARM-HOUSE.

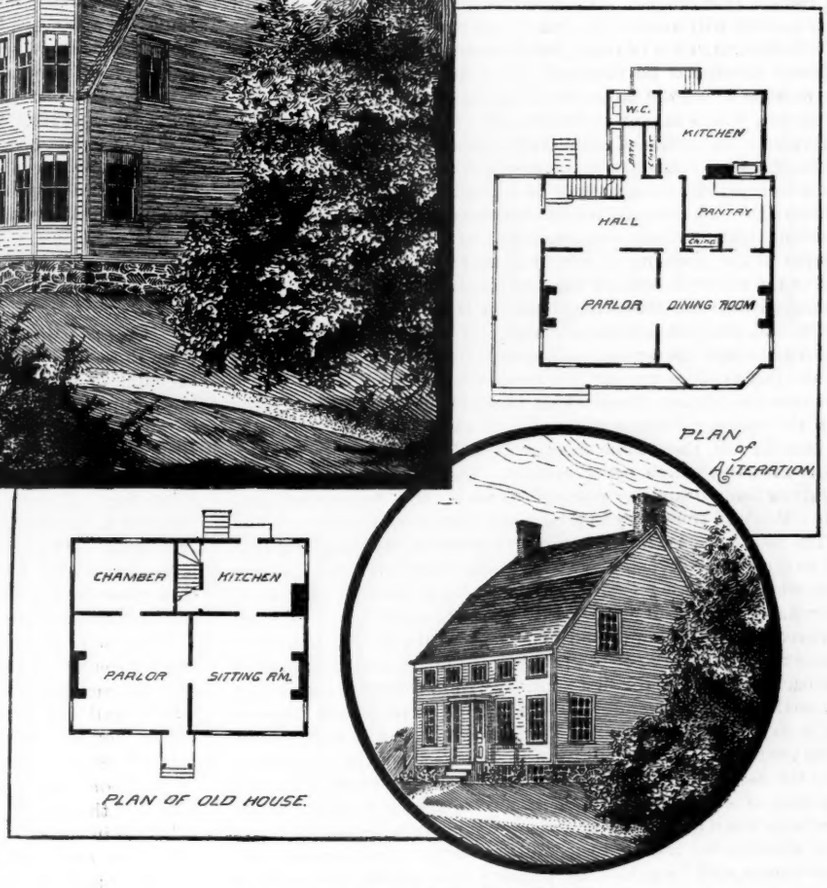
We offer this month, suggestions for alterations of a country house, with illustrations from drawings by Edwin R. Storm, architect, New York. The original structure was a story-and-a-half farm-house with gambrel roof; small, front porch in the center of the house, front door opening directly into the parlor, there being no hall, one room opening directly into another. The cellar is accessible by means of outside stairs placed near the back door. This inconvenient arrangement is all too common in our rural districts.

With the old house before us (this is it in the lower corner enclosed by the circle, the plan at its left); let us see if we cannot obtain convenient, light rooms, easily accessible from each other, yet as much as possible opening from a central hall. Let us have bedrooms upstairs with level ceilings, and withal it must be borne in

THE NEW HOME.

mind it is an old house, so it will not do to make the alterations too expensive. Now, if the reader will look at the upper right hand plan, comparing it with the old plan, we will point out the changes. Take away the old porch, front door and window next to it, putting in a new window. Cut larger doorways opening out of the parlor, and insert folding doors. Remove the partition between the chamber and the kitchen, and take down the stairs and the kitchen chimney. Now, we can reserve the portion used as a chamber for the hall, and a portion of the old kitchen will make a convenient pantry and china closet, opening from the dining-room, giving us plenty of shelf room. Build an extension in the rear, twenty-four feet by twelve feet six inches, with partitions as shown in the plan. The old house may have seven-foot-eight-inch ceilings, but it is not worth while to disturb these, nor are we obliged to follow them in the new construction. So we make the corner posts twelve feet long, and have a ten-foot ceiling in the kitchen, but for the ceiling in the bathroom and water closet, seven feet will do, and will leave more room for the tank.

Build a chimney in the kitchen. Set up a sink, connected with the tank and waste through a "trap" into a cesspool; do not inclose the sink but frame it with legs, like a table. Cut through the old house to enter the kitchen, bathroom, and pantry. Run a partition between pantry and hall, and around the china closet; provide the pantry and china closet with shelving. Build a stairway in the hall from first to second floor, providing it with newel, handrail, and balusters. Cut a doorway for the front door, and remove the old sash, if desired, substituting one filled with stained glass. Build a stairway from first story to cellar beneath the main staircase. In the bathroom set a tub, connecting it with the tank overhead, and a waste-pipe properly trapped leading to the cesspool. The water closet may be of either kind, that flushed by water, or the cheaper, though perfectly safe and odorless, if properly cared for, earth closet, with nothing to get out of order, though requiring some attention. By having the closet connected with the house, a great deal of sickness in delicate women and children may be avoided. Make a back stoop and outside stairs to cellar. The tank, if ten feet by six feet by three feet eight inches, will hold twenty-five hogsheads of water and weigh nearly eight tons, so provide a strong frame under it. Arrange the gutters from the rear of the house and extension so as to discharge the water from the roofs into the tank. Remove the front of the sitting-room, and the attic above, and build a bay extending two stories, roofed as shown, thus forming a tower, put up the dormer adjoining, and a piazza as indicated, then paint and putty thoroughly. We have now a house neat and inviting from the outside, with piazza up, a front door that when opened does not let a flood of rain upon our best carpet, or cool the room in winter; a hall, to receive the running, from which access may be had to the parlor, sitting-room, kitchen, bath, or second floor; a sitting-room made very light and cheerful. With the old fireplaces left? Yes; they are beautiful, moreover they are fashionable, so they must remain. And what will it all cost? Well, if material is about the same as in or near New York, and labor not too high, it can be done for nine hundred dollars.




THE OLD FARM-HOUSE.

**Farmers and Failures.**—Pin up two facts to be considered when you are discouraged: There are fewer business failures among farmers than among any other class; more men begin without capital and become owners of good business in farming than in any other vocation.

## PRUNING PEAR TREES.

H. W. SADLER, D. C.

The pear tree is too frequently a victim of excessive pruning. It is pruned in winter to make it grow, and pruned and pinched in summer to make it fruit. Why it is that the pear, more than other spur-bearing fruit trees, should be supposed to require so close and continued pruning, does not appear of easy explanation. It is evident that it is not followed by satisfactory results. Apple, plum and cherry trees fruit with reasonable regularity, while unfruitfulness in the pear is a frequent complaint, especially with those who prune closely. While it is perhaps erroneous to assert that pear trees should not be pruned at all, it is worthy of inquiry whether unpruned trees do not exhibit a better fruit-bearing record than those which have been subject to close pruning. How far the liability of the pear to suffer from blight may be due to the interference with growth caused by summer pruning, it may not be possible to decide; but the tendency to late fall growths and the consequent immaturity of wood which is thereby encouraged, is well known to be conducive to disease.

Perhaps no advice that has been given causes so much failure and disappointment in fruit culture as that embodied in the brief sentence, "Prune in summer for fruit." The physiological principle upon which this advice is based, is that which recognizes barrenness in fruit trees as the result of an undue amount of wood growth, and that any process that will secure a reduction of growth will induce fruitfulness. The removal of foliage from a tree in active growth will weaken its vitality by causing a corresponding check to the extension of roots, but the removal of the mere points of strong shoots has no practical effect in checking root growth. The roots grow and the sap seeks outlets in other channels, forming new shoots, which in no way increase the fruitfulness of the plant. While it may be confidently stated that, as a practical rule, summer pruning for fruit cannot be recommended, it is also true that there are certain periods in the growth of a plant when the removal of a portion of the shoots would tend to increase the development of the remaining buds, without causing them to form new shoots. For example, if the growing shoots of a pear tree are shortened one-third of their length, toward the end of June, the check will immediately cause the remaining buds on these shoots to push into growth and produce a mass of twigs. If this pruning is delayed until August and the season subsequently proves to be warm and dry, the probabilities are that the remaining buds will develop into short spur-like shoots, from which blossom buds may be formed; but if the season continues wet, and mild growing weather extends late into the fall, these same shoots will be lengthened into weakly, slender growths, which never mature. There is no certainty as to the proper time to summer prune, because no two seasons are precisely alike, and trees vary in their vigor from year to year.

The pear tree, in fact, requires very little pruning, and that only so far as may be necessary to regulate branches. In the first place, when the young tree is placed in its permanent position in the orchard, its roots will be greatly disturbed and many of them destroyed. It will therefore be expedient to abridge the branches, so as to restore the balance of growth. If the tree has been pruned close back at planting, the first summer will develop the foundation for a well-balanced, symmetrical head. But as this result depends upon a good start, it is well to keep an eye on the young growths during the first season, and if any of the shoots appear to be developing to the detriment of others equally necessary for future branches, the points of such shoots should be pinched off. In doing so, let there be as small a removal of foliage as possible, the object being not to weaken, but merely to equalize growth. As a general rule, no advantage will be gained by pruning any portion of the shoots after the first season, unless in the case of weakly trees, which will be strengthened by pruning down during winter. By shortening in or pruning back the ends of shoots, in summer, the fruit-producing period is retarded, and the fruit-producing capabilities of the trees abridged. Fruiting spurs will not form where the growths are constantly interrupted and excited by pruning; but after the third or fourth year young shoots will, in the majority of varieties, become covered with fruiting spurs the second year after their formation, if left to their natural mode and condition of growth. The only pruning, then, that is really essential after the plant has become established will be confined to thinning out crowded branches. If low-headed trees are preferred, those branches that have become destitute of fruiting spurs near the body of the tree may be cut out and a young shoot be allowed to take the place of the one removed. There will be no lack of young shoots for this purpose, as they will be produced from the base of the cut branch. This mode of cutting back branches will be more particularly essential in the case of dwarf pears, as the quince roots are unable to support a tall, heavy-headed tree, but in all other respects dwarf pears should be treated the same as standards.

## PREPARATION AND CARE OF CUTTINGS.

R. G. NEWTON, MICHIGAN.

It does not seem to be generally understood that nearly all varieties of cuttings can be easily callused or rooted before it is time to plant them in the spring. The cuttings are made in autumn, after the leaves fall, and tied firmly in little bunches of fifty or one hundred each. Each bundle should be marked by using two slips of pine, painted one side with white lead, or yellow ochre, and the name distinctly written with a lead pencil in the fresh paint. This is covered by the other slip, and the two are tied together with a piece of thread. This is firmly tied in the bundle, and it will not be necessary to guess at the name of the cuttings. They are stored through the winter either by placing on a bed of moist earth, butt end down, or in a trench two feet wide and four inches deeper than the height of the cuttings. The cuttings are placed compactly in this trench, butt end up, and covered with three or four inches of rich garden soil. When the ground begins to freeze they are covered deeply with stable manure, straw, or leaves, putting on enough to keep the frost from the cuttings. In the spring this manure is removed, and the soil over the cuttings leveled. If it gets dry it is sprinkled with water and kept moist, but not wet, and when the time comes to plant them, most varieties will have good roots started, while the buds are dormant, and when planted they are more sure to grow than if not so treated. The trench should be made on ground where water does not stand. For some of the choicer varieties of grapes, or other cuttings wanted early, a cold frame placed over the trench in the spring, after the manure is taken off, will forward them several days earlier.

## PESTS OF THE POULTRY HOUSE.

MISS E. RIDGEWOOD.

It is easier to shut out cats and dogs from winter chickens than from those in summer coops, but they are always to be feared in brooding houses. The writer's experience makes her dread rats as powerful foes, countless, cruel and endlessly greedy. If there is a Satan in the world of poultry, he surely must take the form of Bishop Hatto's executioners. Of course they can be defeated, but it is difficult to guard against enemies which are such engineers at sawing and tunneling. They are responsible for many crimes charged to minks, often killing half-grown pullets when hungrier than usual. Once on moving to a farm with old outbuildings, fifty baby chicks were taken by rats before they could be protected, and then after the brooding house was occupied, cats, regarded as allies, got in at the windows and killed twenty more.

Fine wire netting is a safeguard against rats, which after all are not really reasoning beings. It bewilders them by its transparency and toughness. A width of it fastened over the angle where wall and floor join is a great protection, because that is where they are most apt to gnaw, but put not too much trust in this defense, for their wicked, bright eyes may appear in the middle of the floor. Brick foundations help in keeping them out of buildings, but the cost is often too great. The creatures may easily be poisoned in their holes, but if they die in unreachable places, the odor they make poisons the wee chickens. Well-trained cats are capital guardians of brooding houses, but must themselves be watched, lest they yield to a sudden temptation.

**Save the Ashes.**—Ashes are a fertilizer of such general utility that even small quantities are worth saving. Many who use hard coal for the stoves, in winter and the colder months, employ wood for cooking, for the most part, in warm months. It is astonishing what an amount of rubbish may be disposed of, and turned to good account, by saving and splitting into proper stove size all available fuel—old boxes and barrels—for which there is no other use; old articles of furniture, not worth mending; branches of trees which have been removed in pruning or broken off by storm. All such materials should be stored under a shed, until a stormy time in winter makes this proper wet-weather work, at which all hands, old and young, will find it more like play than work. This should

be stored in a wood-shed, easy of access from the summer kitchen. The ashes made during summer—being mainly from wood—should be stored separate from coal ashes. They are of too much value to be mixed with them. Another source of ashes should not be overlooked. In the general clearing-up which every well-kept place requires in early spring, or other season, there will be a lot of stuff too poor for fire-wood, and only fit to make a bonfire. Make such a bonfire on a flat, moist place, and keep the burning heap small, adding the fuel from time to time, and so manage that the ashes

FIG. 1. THE CAROLINA RAIL.

will be left in a compact heap, easily to be taken up and stored in some out-of-the-way shed. Remember that ashes will hold fire in the shape of burning coals for weeks, and that many mysterious fires are due to no other "incendiary" than the improper treatment of ashes.

## THE CAROLINA AND VIRGINIA RAILS.

The marshy margins of the Atlantic and Gulf of Mexico are the home of numerous species of birds belonging to the order of *Grallatores* or waders, most of which are classed as game birds. The largest of these are of the sub-family *Rallinæ* or rails. Two very interesting species of these are illustrated herewith. The Carolina Rail or Sora (*Porzana Carolina*) shown in Fig. 1, is about eight inches long, exclusive of the tail. The general color of the plumage is olive brown, with longitudinal stripes in the back and horizontal bars beneath of dull black, with grayish white borders. The average weight is about half a pound. It resembles in many points the corn-crake of England. The Sora is often called a "mysterious" bird, from its singular and unexpected ways of going and coming. All manner of superstitions have grown out of this, one being that the birds bury themselves in the mud and hibernate there. Another, and still more absurd notion which once existed among ignorant people was, that the Soras went into the mud and turned to frogs. In fact, the birds are of migratory habits, performing their flight during the night. They leave the extreme Southern coasts early in spring, working northward by short stages, when favored by the wind, and feeding along from one stopping-place to another. During the day they skulk in reeds and grasses, and arriving at their nothernmost destination, make their nests in inaccessible marshes. In autumn they return, by slow and leisurely stages, to their Southern haunts, appearing one day in great numbers in places where not one can be seen the next.

As a game bird, the Carolina Rail is a great favorite with sportsmen. When the birds have remained on their feeding ground long enough to become plump and fat, the flesh is tender and delicious. They are found in such numbers that a great many are killed. Two men are required to hunt them in their watery haunts. One, who is called the pusher, sits in the stern of a flat-bottomed punt, and propels it through the narrow, marshy channels, through the high reeds, while another stands in the bow with a gun, to shoot as the birds rise. In most places frequented by the rails, this can only be done at high tide. With a good repeating shot-gun and an experienced pusher, a skillful sportsman can make a great bag. The pusher must not only handle the boat with care and skill, but also keep a vigilant eye out to mark down the birds as they fall among the tall reeds and grass. Rail shooting on the salt marshes along the Atlantic coast, during high tide, on a mellow September day, is exciting sport.

The Virginia Rail (*Rallus Virginianus*), Fig. 2, is somewhat larger than the Sora, and frequents fresh, as well as salt, water. The Virginia Rail also performs its migrations silently, in the night, flying northward in spring, and returning to the South for the winter. It is less sensitive to cold than the Sora, and remains in northern localities later in autumn. It is exceedingly swift of foot, and when pursued through the reeds, it is able to outrun, or, by swift turning, to elude, the best dog. The flesh has not the delicious flavor of the Carolina Rail, but still the bird ranks high as game.

## AUTUMN PREPARATIONS FOR POULTRY FARMS.

MRS. E. K. WINANS, NEW JERSEY.

One of the singular things about poultry farms is that harvest time is in winter. There must be hard work done in these splendid, vigorous autumn days if the best crops of eggs at Christmas, and broiling chickens in March, are to be gathered. Now is the time to put all things in order—to mend cracks which let in cold air where it is not wanted, and to make ventilators which give air where it ought to be. Now is the time to visit model brooder houses, or if that is not possible, to study plans of them, and find how much cheaper it is to have hot water pipes in a floor than to lose nine-tenths of the chickens hatched, after two weeks of listening to their crying from the cold.

If the poultry work is in the usual two branches—forcing eggs for market and raising early chickens—two separate supplies of eggs will be needed. Eggs from hens which are urged to lay by much heat, meat and wheat are often no better for hatching than stones would be, and when chickens do succeed in getting out of the shells, they usually die in their first week. That is one of the dozen reasons why eggs bought in the ordinary market seldom do well in incubators.

The hens in the breeding yard should be simply encouraged to lay by good food and kind care. [The word "yard" in poultry language means flock, and may not have anything to do with fences.] There is the interest of speculation in working for winter eggs. From the manageable number of two hundred hens one may clear fifty dollars' profit a month, or, under apparently the same conditions, one may lose all the money spent for food, stock, and buildings. Good food, proper ventilation, and a temperature not under forty degrees, are the important points. The dangers are of over-crowding and under-cleaning. Each hen ought to be allowed

FIG. 2. THE VIRGINIA RAIL.

at least three square feet of floor space, and one square foot of window glass. A glass house, for day use only, is often a paying investment. In such roomy quarters they can be imprisoned through cold weather without danger of the moping which is sure to stop their laying. The hens should be strong; young or "youngish;" if pullets, not late ones; of good strains of winter layers. All ailing birds should be quickly taken from the flock. Roup should be watched for and guarded against—especially as spring approaches. It will not be surprising if the best layer in the forcing yard drops from her roost with a stroke of apoplexy, for that is

caused by just the conditions under which she has been living. They should have boxes of the gravel, charcoal, glass, china and other things that they yearn for, and plenty of dust for baths; and they should have a feeding platform, to be used only at meal-times. The layers of eggs to be hatched must be kept happy and hardy. They should go out-doors when they like, and should be fed in the open air whenever that is possible. Better a dozen eggs from such a yard for one's incubator than a hundred from the other. Many more cocks are needed in the breeding-yard in early winter than in spring and summer.

In autumn food is cheap, and it is wise to buy stores of corn and buckwheat. Small cabbages, which farmers scorn, will help bring eggs in December, and if possible, winter rye should be sown as green food for the breeding-yard. Clover, lettuce and canary grass should be planted indoors for the use of the young chickens. Those young chickens are usually the best worth working for, but unless one realizes what obstacles there are to raising them, disappointment is certain. Beware of too large a brooder-house. Cold is deadly for very young chicks, and more broiling chickens can be raised in a thoroughly-heated house ten feet square than in a draughty one fifty feet long. See, too, that the heat is down where the chickens are running; not up where their owner's head is. Many a brooder-house records seventy degrees on the wall, and barely fifty on the ground. In such houses chickens are only hatched to shiver and die. But no matter how small the house is, the chicks of different ages should be kept apart, for their bigger brothers and sisters are sure to domineer.

## FARM WAREHOUSE FOR GRAIN.

Mr. Edward O'Donnell, Ramsey Co., Minn., writes to ask us, in behalf of himself and other subscribers in the Northwest, for the plan of a practical storage warehouse for grain. He adds: "Mis-

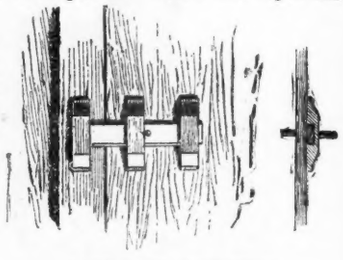
A NORTHWESTERN GRAIN WAREHOUSE.

takes are often made in estimating the strength of materials for buildings and bins to hold grain. It is no rare thing to see a farmer's granary bursted and the grain scattered over the ground. Another difficulty with our present style of granaries is the labor involved in putting in and taking out the grain, climbing over the tops of the bins and the grain every time."

Our illustration shows a very simple and cheap form of farm storage building. It may be of any desired dimensions. In a neighborhood of moderate-sized farms it is well for several farmers to join in building one in a convenient location, each owner having separate bins for his own grain. The underpinning, sills and posts must be firm and substantial, but the rest of the structure may be built of comparatively light materials, as the pressure of the grain falls on the bins, which are made sufficiently strong to withstand it. A platform for loaded grain wagons extends along the entire length outside of the building, with an inclined approach at each end. The bins extend from two feet above the upper floor downward to within three feet of the ground. It is quite as well to leave the lower story with no floor at all, except the smoothly-packed earth. The lower part of the bins is made to taper downward, like an inverted pyramid, with a hole on one side of the apex, covered by a slide. The cheapest and strongest method of constructing the bins is of inch boards laid flatwise, one above the other, lapping at the corners. The width of the boards makes the thickness of the bin, which is from three to six inches, according to size and capacity. The bins are supported by strong posts resting on mudsills. The wagons are driven up one of the inclines to the platform and unloaded by carrying the grain into the warehouse and pouring it into the bins, or run in through a spout projecting through the side of the house. When it is desired to remove the grain, the slide at the bottom of the bin is raised, opening the outlet, and the grain drawn out. In very large warehouses the bins are so high that a wagon may be driven under them and the grain drawn directly into it. One or more slatted ventilators upon the peak of the roof are useful, but not indispensable.

## MUCK DEPOSITS.

Many a farm contains a deposit of unexpected value in the form of a deposit of muck, in what has been looked upon as a swamp hole. Make an exploration of such places. Learn the depth and character of the deposit. If there are more than one such deposits, see which can be best approached by animals and vehicles to draw away the deposit; which can most readily be drained in order to facilitate the digging. This month will usually afford favorable spells for digging the muck and placing it in heaps on higher ground, to drain and become more or less dry, so that it may be taken to the barnyard, where it may be added to the manure heap.



BARN-DOOR FASTENING.

## A CHEAP BARN-DOOR FASTENING.

One of the most convenient fastenings is shown in the above illustration. It is a wooden slide with the pin projecting through equally on either side, a slot being cut in the door to allow it to move back and forth. Such a device will be appreciated by those who use one-sided fastenings, and have experienced the chagrin of finding the door impassable, because they have come to the door on the opposite side from the fastening.

## TWO CONVENIENT FARM GATES.

Figure 1 shows a form of farm gate which may be made at a cost of less than a dollar for material, and three can be made in a day. It is made as follows: Two pieces of inch board, six inches wide and eight feet long, for the hanging pieces; two pieces five feet long for the middles and two pieces five feet long for the foot. The four bars are of inch board six inches wide, nine feet long, and there is one brace eleven feet long, as shown in the engraving. The bars are nailed between the uprights with ten-penny steel nails, and a carriage bolt is put through at each joint. The brace is bolted to all three uprights, passing between the two hanging pieces. The fastening is a sliding bolt passing between the two foot pieces and the brace and a piece nailed on the opposite side, and two wooden pins are put in the bolt to move it by. The gate is hung by strap hinges to a high post and the foot post is mortised to receive the sliding bar.

Another gate, shown at Figure 2, is made wholly of wood; not a nail or bolt is used about it. This gate is hung upon a rather heavy pole large at one end and lighter at the other, so as to balance

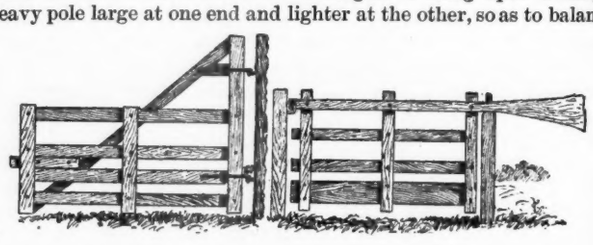


FIG. 1. WELL-BRACED GATE.

FIG. 2. BALANCE GATE.

the gate upon the heel post, where it turns upon a wooden pin passing through a slot in the beam. The gate is put together by wooden pins wedged at the ends. It catches in a notched piece of wood fastened in the foot post in a hole bored with an inch and a half auger. As time is the cheapest thing on a backwoods farm and is so cheap as to be quite often wasted in large quantities, this gate may be said to cost nothing at all. As for material, it may be made out of timbers split and dressed with an ax, and yet it will do all the service of the most costly one. It can never sag, because it is balanced on the post.

## THE CONSTRUCTION OF DAMS.

The present year has been prolific of disaster, many of the most serious having been caused by the giving way of dams. The appalling catastrophe at Johnstown, Pa., followed by less serious, but still destructive, disasters in New Jersey and other States, all resulted from fatal errors in construction of dams. A dam, like any other engineering work, must be built in accordance with the principles of construction. It is easy to figure exactly the force which a dam can ever be called upon to resist, and manage the construction in such a way as to provide an excess of strength and permanence. The lake whose waters broke through the dam at Conemaugh was

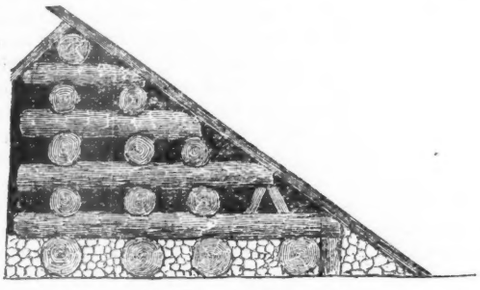


FIG. 1. A TIMBER DAM.

a mere pond as compared with some of the bodies of water in India, collected for impounding the annual torrents for use in summer irigation. Some of these works have stood for centuries, in spite of all the floods which have been thrown upon them.

The chief cause of failure in dams of all kinds is the faulty construction of the foundation. Just as a house will fail by reason of a weak foundation, which may be crushed under the weight of the walls, so a dam gives way by the gradual loosening of the foundation caused by the flow of water through leaks. Earth dams above three feet high are sure to be washed away at some time, if they do not sink gradually by the certain percolation of water through the bottom. The weight of a bulk of water three times as large as a rock will move the rock bodily, as if it were wood, and the difference of specific gravity is overcome by the height of the water over the heavier obstacle. A very small torrent will roll large bowlders along its course with ease, and this enormous force of water must always be provided for in all hydraulic work.

Dams should be made of timber or stone. A safe and simple form of a timber dam is shown at Fig. 1. The foundation should be rock or hardpan of gravel, and the mudsills on the lower tier should be bedded in broken rock, pounded down firmly with a fifteen-pound sledge. The sills are saddled, and the cross-ties laid upon them are notched to rest on the saddles, and two-inch pins should be put through both of the logs. Where the foundation is shelving rock, one-and-a-half-inch iron pins should be put down into the rock at least a foot, to prevent sliding. But the sliding force is almost neutralized in this form of dam by the weight of water, which lies upon the sheeting. The tiers of timber are built up as shown, and saddled, and notched, and pinned in the same way. A plank sheeting is put down to the solid foundation above the first sill, and is spiked with eight-penny spikes firmly. The sheeting is

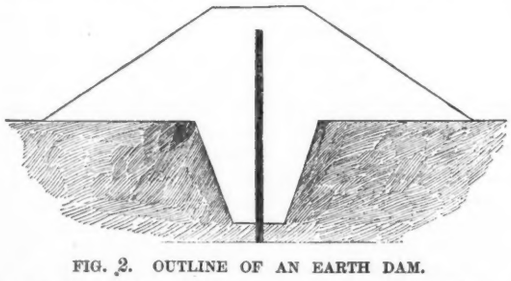


FIG. 2. OUTLINE OF AN EARTH DAM.

fitted to the foundation as close as possible, and hydraulic cement concrete is bedded in front of it, to make a tight joint. No leaks will ever trouble a dam founded in this way. The rafters should be strong enough to bear any weight of water which the stream may carry doubled. If the highest flood known is five or ten feet above the usual level, it is easy to estimate the strength of the rafters required, and then double the number of them, putting them no more than two feet apart, if the sheeting is of one-inch board doubled. If any error is made, it is the cheapest to err upon the safe side, as the cost of more material will be much less than that of a new dam, and perhaps a mill that may go with it. An apron should be put in front of the dam, to receive the overflow; this throws the weight of the water on the face of the dam, and balances so much of the pressure on the upper side.

An earth dam may be made safe by sheet piling, driven to rock, or hard-pan, or clay, in the center of the excavation, as shown at Fig. 2. A dam should never be built on surface soil, but the center should be placed on solid ground. As the earth is put in it should be well packed by driving oxen or horses back and forth, or by ramming it well. This prevents settlement when the water is let in above it. The ends of an earth dam should be protected with sheet piling at least two feet higher than the overflow at the center, and the overflow should pass over solid plank flooring, spiked to timbers well bedded down on the top and both sides of the dam. This will prevent washing of the top.

A masonry dam should be built on a solid foundation of concrete, laid on solid rock, over piles driven close together, and protected on both sides by sheet piling. The piles should be left to protrude into the concrete foundation. Except for water-works, there should be no outlet in the bottom of the dam; but the work should be of the most solid character, and of the form shown in Fig. 3. A waste channel for overflow should be made on the top large enough to carry off any possible flood, and the ends of the dam should be carried up with solid masonry as high as may ever be needed, to prevent cutting out of the ends by the flood. A large dam should be constructed regardless of expense to secure safety in every direction, and the small details of construction are very often the most important parts of the work. Any person who might under any circumstances build a masonry dam in hollow shell form, and fill it with dirt or leave earth banks on either side of the dam, should be confined in an asylum for imbecility. No doubt, considering the vast importance of securing unquestionable safety to the

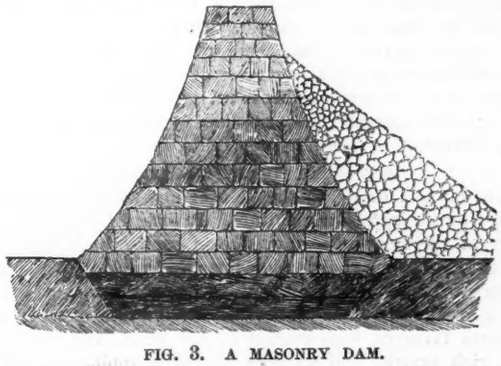


FIG. 3. A MASONRY DAM.

unsuspecting public whose lives may be endangered, all persons practising as hydraulic engineers should be licensed only after exhaustive examination by competent men. If a veterinary surgeon or a physician—who could scarcely kill a hundred persons by the mistakes of a life-time—must be properly licensed before he can practise, how much more should an engineer be, upon whose mistakes thousands of lives may impend.

## SELECTION AND CARE OF SEED-CORN.

ROBERT L. DEAN, OHIO.

Select for uniformity. Keep in mind the location, the nature of the soil, climate and number of days required for maturity, and choose a strain suited to the particular situation. In most cases better results are possible from home-grown seed than will follow buying from a distant seedsman. Clayey uplands require shallow-grained varieties, with slender cob, of good length. Bottom lands will mature deep-grained varieties, with thick cob, and kernels less flinty. Choose a strain which is adapted to the location, and yields the best and most shapely ears, and endeavor to improve it each year by selecting the best for seed.

The work of securing seed-corn should really begin at planting-time. Let a small plot of the best ground of the entire area for the corn crop be planted early and receive a little extra cultivation. The corn will ripen early, and as soon as the kernels are sufficiently hardened, it should be cut and set up in small shocks. This will allow the corn to dry rapidly. Husk the entire plot before there is any possibility of an autumn freeze. While hauling to the crib, select from the entire lot such ears as approach the ideal corn. This

will be an easy task when the selection is confined to such a small area. It is not safe to depend upon the air and sunshine to dry the corn thoroughly, but it is better to place the seed-corn where it will secure artificial heat, and dry it until no freezing will damage it. It is now ready to be stored for the winter.

The best place is some unused closet in the dwelling, where the temperature does not fall very low, and the air is free from moisture. In early days the corn strung over the mantelpiece in the pioneer cabin never failed to germinate. Any dry place, free from vermin, and where the temperature is never very low, will likely do for this purpose. The method followed by those who select the seed-corn by passing at random through the fields while the stalks are standing does not always secure the very best ears for seed, which is certainly the most important part in the improvement of the strain. Furthermore, many depend upon the atmosphere to dry the seed. Last fall there was but little drying weather, on account of the long-continued rainfall; as a consequence there was a widespread complaint last spring about poor seed—slowness in germination.

## CROPS WITHOUT RAIN.

RICHARD WAUGH, MANITOBA.

Ten inches of rainfall in March and April are reckoned essential to the production of a full crop of wheat in California. I have repeatedly seen crops of wheat, superior in all the most valuable properties of that grain to anything ever produced in California, that never saw rain from the day they were sown till they were gathered into the elevator. Those crops ran all the way from fifteen bushels to over thirty bushels an acre. How were they raised? By cultivating in accordance with the very simplest first principles of natural science. Abundance of sunshine above ground, and nearly perfect capillarity in the soil below, were the two simple agencies employed in the two very dry seasons of 1886 and 1889 to raise those crops of No. 1 extra hard in northern Dakota and Minnesota, and the Canadian Northwest. This cannot perhaps be done in every place even there. But there are large areas of deep alluvial deposit, frozen in average winters to a depth of from five, six, to ten feet, on which it is possible to raise good crops, with scarcely a drop of moisture except that supplied by the night dews and the capillary attraction of properly prepared soils.

### HOW WERE THEY PREPARED?

Not, so far as I know, by the help of any advice furnished by recognized authorities on agriculture. Practical farmers, at points far apart, and without any knowledge of each other's movements, came to the conclusion that to plow deep and pack as firmly as possible afterward, was the safest way to avert the mischances that have, to a great extent, made abortive the sanguine expectations of the bonanza farmers, who started in ten years ago, with 30,000 acres of rich prairie, and an acre of costly appliances for their cultivation. There have been severe droughts in that time and great rains, but experience has fully demonstrated that seed well put in, especially with some form of press drill, on soil first well plowed and then well packed, will defy any drought. Should the reverse condition come up, all that is necessary is to have a grade and ditch round each section, however level, so that excess of rainfall may get off without needless delay, and deep plowing and close packing, just as in the other case. Loose earth is like a sponge, holds no end of water, and the crop growing in that sponge of soil will sicken, and grow yellow. Should the heads be filling, they will get scalded through the combined action of the hot sun above and the wet soil below. Squeeze that soil with a heavy iron roller any time after it has been plowed and harrowed, and, no matter how much or when it may rain afterward, only enough moisture will stay to do the crop good. The only risk is that it may get too much good and grow too rank.

### SUMMER FALLOW

is the agency usually employed to produce the degree of capillarity requisite to success. But last fall a friend of mine plowed his stubble very dry, and being sure no rain would come till six weeks after seeding this spring, he harrowed, rolled it well, and harrowed again, sowing in spring as early as possible. He has now a capital stand of grain, while everybody else who plowed their stubble dry, and set it up loose to dry still more, sowing in loose, dry mold in April, have a dead failure. The snowfall north of 47° degrees is very trifling as a rule, and so fine and dry that it never lies anywhere but in deep grass or bushes, and there is rarely any rain till June, so that the grain crops must depend for a start almost solely on the moisture found in the land at seed-time. In ordinarily wet autumns enough sap is left to start all seeds beautifully, and carry them along till summer rains come to their aid. This season's crop, much of it sown on stubble plowing, with a gatling-gun seeder, has as a rule, proved a disastrous failure. New land well broken, or summer fallow once plowed but no more, well harrowed in the fall and drill-seeded in spring, have as a rule made a good-paying yield, all the way from twenty up to as high as forty bushels per acre, though the general average of rainfall cannot have been much over one-third of the average needed to secure a crop in California. Mr. Mackay, of the Experimental Farm, at Indian Head in the Canadian Northwest, a first-rate practical farmer, favors two plowings of summer fallow, but the Red-River-valley men three hundred miles further east prefer one, as too much stirring induces excessive vegetation and an unprofitable growth of straw. Paris Gibson, at Great Falls, Montana, has secured good crops repeatedly from the same field while other people around were dried out, just by his working on the same general principle. His land usually gets rain enough in the fall, and when a Chinook wind comes along in February, just enough to thaw out the surface, in goes the seed. That land has sap enough in the finely comminuted soil to keep a crop fresh and growing, whether it rain again or not, for the early growth keeps out sun and wind from the roots, and as the sun pulls at the top the roots bore right down after the moisture and mineral plant-food stored up there. A spring shower that wets the land only an inch or two down has a strong tendency to draw the roots to the surface, where they get half parched by after droughts, but when a plant must live on dews and bottom moisture it adapts itself to its environment and flourishes accordingly.

I am not sure that the admirable farmers from whose experience I have culled, could without the help of a dictionary tell what capillarity is, but they have worked in accord with that great first principle. They have without knowing it exactly been farming very scientifically, just as the tyro in dialectics found to his delight that without knowing it he had been able to talk and write prose all his life.

## HOLIDAY GRAPES.

Though quantities of grapes are consumed all through the fall, yet it is to meet the demand at Christmas and New Year's that the vineyardist directs his chief efforts. Preparation begins by producing fruit worth keeping; by good cultivation, thinning out the crop, prompt treatment of mildew, etc. The fruit should be thoroughly ripe; the stems of the clusters lose their rigidity, and the clusters hang directly downward from the vine. In picking, handle by the stem only, and avoid removing the bloom. Lay the clusters in shallow trays, in a single layer only. The trays are taken by a spring vehicle to the fruit-house, which is provided with racks, to allow the trays to be placed one above another, but far enough apart to allow of ventilation. The fruit-house should be provided with means to control the admission and the exclusion of light, air, temperature, moisture, etc. The grapes may remain in a house of this kind for months, and, when wanted for packing, will be found to be "cured;" *i. e.*, while the berries retain their plumpness, their skins have acquired toughness; they will cling to their stems, and can be handled in packing more safely than when freshly gathered. Packing is done in a light room, and all decayed, imperfect, or unripe berries removed, with scissors made for the purpose. The kind of packages will depend largely upon the preferences of the market—round or square pasteboard or wooden boxes, holding from one to five pounds. Some growers use paper packets holding a pound each, of which two dozen are packed in a light pine box. Some take great pains to make their packets and boxes very showy, by the use of ornamental gilt or colored papers, fancy labels, etc. In some markets the showy package is greatly remunerative in increasing the price for the fruit. Tight boxes or other packages are preferable to any ventilated ones. In packing in wooden cases, the bottoms are opened, and the finest bunches put in, the space being filled with smooth bunches, so as to require some pressure to bring the cover (really the bottom) to its place. When this box is opened there will be seen a solid mass of grapes, with those at the top slightly flattened by the pressure.

**Don't fail** to utilize all the turnip tops the garden affords. They make fine chicken feed. Either throw them on the ground, turnips and all, for the chickens to pick at, or tie them in bunches with a coarse string that will not cut, and weight them down with a rock. The turnips themselves, if cooked, mashed and mixed with bran and shorts, make excellent feed for laying hens and growing chicks.

## THE FIG IN CALIFORNIA.

CHARLES H. SHINN, CALIFORNIA.

I have lately visited the leading fruit districts of California, and I am more and more impressed with the probable future of the fig-growing industry of this State. Growers have not yet settled down upon the best varieties to plant, and there is much discussion, some of it rather acrimonious at times, as to whether the true Smyrna fig of commerce has ever been brought to this coast. I think that we have the true Smyrna, and some other very promising varieties, of which the White Adriatic is easily the first, and will probably become the "dried fig of California." But I do not wish to enter into the local issues involved in the discussion of varieties now being planted here. I much prefer to state in as plain terms as possible the prospects of the fig business here. Probably no other country in the world has so much fig-tree land as California. The size of trees is enormous, and out of the fifty-three counties of the State all except five or six, in the high sierras on the extreme northeast, have many acres of rich, warm soil, where the fig grows to perfection. From San Diego to Shasta there is not a county without old fig-trees, of great size, and superb healthiness, loaded each year with two or three crops of fruit. In my boyhood I remember the fig-trees of the common black or Mission variety which grew in the old priest's garden at the Mission San José. They were probably seventy-five years old. The larger had trunks thirty inches through, and the branches spread over a circle of fifty feet or more in diameter. They were cut down when the Mission tract passed into other hands—an act of disgraceful vandalism, which has been repeated many times in the history of the old Spanish gardens of the Pacific Coast. There are other fig-trees of American planting in Alameda county, by old farm-houses—trees of twenty or thirty years ago, and fifty feet high, already. This is within thirty miles of the city of San Francisco. Still, the fig is not the thing for extensive planting in the Bay climate. It is in the warm valleys of the interior, and the southern counties that the fig is likely to become the source of great revenues.

FIG. 1. WINTER VIEW OF CALIFORNIA FIG-ORCHARD.

In the Vacaville district, in Pleasant Valley, Mr. E. K. Thurber, one of the most progressive fruit-growers in California, has a grove of figs of the common black variety. Four acres are in large trees, and he has a large plantation of young figs, which he will graft to improved varieties. His largest trees are eighty feet high, and completely cover the ground. It is a magnificent example of what can be done here, for they are only twenty-five years old. Figure 1 is a partial view of Mr. Thurber's orchard in winter. The first crop is sold fresh; the second and third crops are dried. There is money in them, and will be for years to come. The figs are allowed to ripen on the trees and fall; are gathered up, rinsed in water, put on drying floors for a few days, then packed in sacks and shipped. With the true White Smyrna of commerce, when such a careful grower feels sure that he has really secured it, all the care that could possibly be spent on packing would certainly pay, and, as with California raisin-making, labor-saving apparatus would soon be introduced. Many other fig-growers besides Mr. Thurber are in Vaca and Pleasant Valleys, about Winters, or Putah Creek, or Cache Creek, and along the Yolo and Solano foothills. They are testing all the varieties of figs that can be obtained from Europe and the Southern States. The great plain of the San Joaquin basin is a natural fig country for many miles. All the irrigating canals may be lined in the near future with rows of figs. Kern, Tulare, Fresno, Merced, Stanislaus and San Joaquin are capable of supplying figs for the world. Still further north, the counties of Sacramento, Butte, and in fact all of the Sierra foothill counties are adapted to the fig. The tree in the upper San Joaquin—say in Fresno, Tulare and Kern, grow as large in four years as they do near the coast in eight years. Figure 2 is engraved from a photograph of a fig-tree four years old in upper San Joaquin, Kern Co. W. W. Williams and Gustav Eisen, both of Fresno county, are pioneers in fig-culture. The latter has long studied the varieties of the fig, and is considered an authority on many important points; the former has the largest fig-grove in California, the variety being White Adriatic.

FIG. 2. A FOUR-YEAR-OLD FIG-TREE.

As one rides through the Californian foothills one often comes

to some old ranch-house; the building has decayed, the orchard has run wild, stock have broken it down, and lack of culture destroyed it. But the fig-trees by the waters, planted years before, grow and fruit in perfect health and strength. Over the log-cabins of miners in Shasta, beside ruined towns in the Sierra foothills, on the Merced plains, in the Livermore and Suñol Valleys, I have found such fig-trees, deserted, and as much at home as oaks or sycamores. They give evidence of the adaptation of the fig to California that the horticulturist does not overlook. Everywhere in the hotter valleys men are planning for fig-tree plantations. There is, of course, only a limited demand for fresh figs, though refrigerator cars would probably open large markets. But it is the dried product that growers plan for. As one grower said to me: "The fig can be produced at a profit for half-a-cent per pound in the orchard; dried for four cents. In twenty years we ought to give the American consumer dried figs at six or eight cents a pound, retail. Then we shall develop a business as large as the prune or the raisin business." And I have no doubt of the possibility of all this. The fig produces a crop, per acre, that neither plums, apricots, peaches, nor any other deciduous trees begin to equal, and the trees require little care and no pruning. It is a coming orchard-tree of the warmer portions of California.

## HARVESTING AND STORING SWEET POTATOES.

D. Z. EVANS, JR., PENNSYLVANIA.

As soon as a heavy frost strikes the vines, which is readily known by the leaves turning black, cut off the vines close to the ground; then, with a heavy two-horse plow, throw two potato rows together. Boys or men then follow, remove the tubers carefully from the stems and lay them on the soft soil between the rows to dry off, which they will do in an hour or so. They must be handled as carefully as eggs, especially at this time, as the skin is very tender and can be rubbed off by the hand, nor should they ever be thrown, but carefully laid down. This may seem to some unnecessary trouble, yet if sweet potatoes are expected to keep in good condition they cannot be handled too carefully. As soon as they are dried, carefully rub off any adhering loam or soil by turning each tuber around in your hands a couple of times, and then place them in the baskets, barrels or chests in which they are to be stored, so that they cannot be readily shaken about when the packages are handled. If intended for immediate shipment, they are at once forwarded, in well-ventilated barrels or boxes. Large strawberry crates are excellent to pack in when intended for keeping, as they are not so deep as barrels. If intended for winter use or sale, the packages should be stored in a well-ventilated place, free from dampness, where they can remain until cold weather comes on, when they should be removed to a warmed room. The packages containing the potatoes should not be moved more than is absolutely necessary, as changing them from place to place is apt to produce sweat and decay.

One of the very best places to keep sweet potatoes during winter, is a tight loft or room over the kitchen, so constructed that the heat from below can readily be utilized in warming the loft or upper room. It should be borne in mind that rats and mice are very fond of "sweets," and will soon do considerable damage among them if not guarded against. Sweet potatoes can stand much more heat in winter than the common potato, in fact will keep well under a degree of heat which would soon shrivel or rot the latter.

## GILT-EDGE BUTTER-MAKING ON THE FARM.

ELLA ROCKWOOD, MICHIGAN.

The possession of a pure-bred dairy herd of cows is a decided advantage, yet native or grade cows in good health, with good care, feed, and abundance of pure water, will furnish milk from which first-class butter can be made; although probably in smaller quantity per cow than from a butter breed. The milk should be drawn from the cows quickly and quietly, after the udder has been well cleaned. No noise or confusion can be allowed, much less harsh words or blows. The cows must be kept quiet and contented, to secure pure milk, the first requisite in the manufacture of good butter. Remove each pail from the stable as soon as it is filled; as every moment it remains exposed to odors of any kind injures the flavor of the milk. Strain as soon as possible into deep cans, either in a creamery or tank. The cans should not be more than six inches in diameter, and four is better. After the milk has stood twelve hours at a temperature of forty-four degrees or thereabouts the cream will all have risen, and should be drawn off to ripen. A can made of heavy tin, provided with a close-fitting cover with a small hole in it to allow of ventilation, should be used for the cream. It should be large enough to hold the entire quantity for a churning, and it is better to keep it where the cream will remain sweet until enough is obtained for a churning. Then it is allowed to sour slightly, stirring it frequently to insure evenness of acidity. Be very careful that the cream does not become too sour, nor too warm. In my experience if the cream rises much above sixty-five degrees it does not make butter that will be firm and solid. It soon becomes soft and sticky when exposed to warm air.

Do not add cream to that to be churned less than twenty-four hours before churning. It will not ripen perfectly, and much of that added last will be lost. Use a churn with no dasher or paddles inside. They injure the grain of the butter. Have the cream at sixty-two degrees in summer, and sixty-four degrees in winter. Don't guess at it; have a thermometer. This costs but a trifle and is indispensable in making good butter. As soon as the butter begins to grain, test it with the thermometer. If it is too warm, which it is quite likely to be in summer, put in lumps of ice until the temperature falls to sixty degrees. Then revolve the churn slowly until the granules of butter are the size of wheat kernels. Draw off the buttermilk, or as much of it as possible without the butter; add a pailful of cold water, revolve the churn a few times, draw off again, and repeat this process until the water comes away clear. Then add a handful of salt to a pailful of cold water, pour it over the butter, let it stand a few minutes, draw off and let the butter drain.

Take out the butter either in a butter-bowl or butter-worker; if the former, take only a few pounds at a time, sprinkle salt evenly over it at the rate of one-and-one-half ounces to the pound, or according to taste. Press the butter with the ladle, chop the salt in well, turn and press again. Pour off the accumulated brine, and work lightly by pressing with the ladle, always bearing in mind that the granules of butter must not be broken. When the salt is sufficiently incorporated with the butter pack it away at once. No further working is necessary.

After the package is full, cover the top with a circle of parchment paper wet in cold water; press smoothly to exclude the air, and cover the whole with salt, wet to a "slush" with cold water.

## WORTH READING TWICE.

Before you enlarge production, cheapen its cost.

The moon is never right while the seed-bed is cloddy.

Country roads are too often paved with good intentions.

No man ever reaped foul wheat from clean ground and clean seed.

When prices are low is just the time to improve your farm animals.

A cross may be better than a full blood for feeding, but never for breeding.

Fortune's favorites are the men whose thoughts make ways for their actions.

If there were more drains on the farm there would be fewer druggists in the village.

Make easy and short the way to the butcher of the animal that has learned to break fences.

There is some sentiment about having an ice house on the farm, but there is at least as much financial wisdom.

Pay cash, if you have to borrow money to do it. The banker will charge you less than the merchant for credit.

Good farming consists as much in overcoming adverse circumstances as in improving fully favorable opportunities.

On an average, the man with the fewest clods in the field in the fall has the most wheat in the field the next summer.

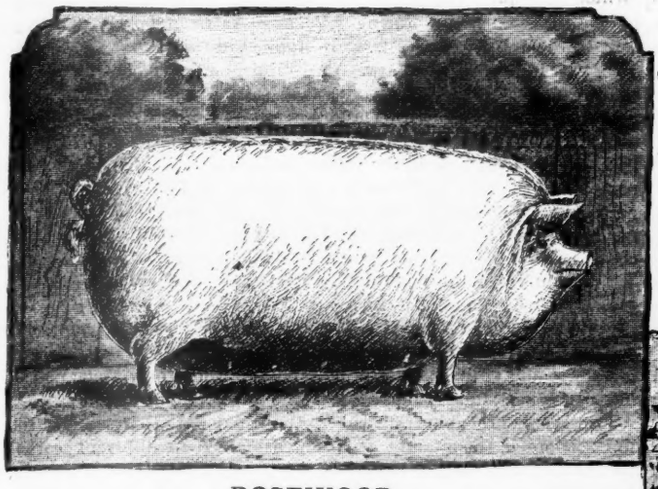
Let the hogs clean up the waste apples and peaches under the trees, and there will be fewer waste fruits next year. There will also be better hogs this year.

You cannot increase your products without increasing your expenses; but production increases at a faster rate than expenses increase. Herein is the greater profit of good farming.

**One Point About Threshing.**—Don't allow the strong men to force the boys on the straw stack. There's enough value in straw to justify the best labor in handling it.

## THE VICTORIA BREED OF SWINE.

The latest improved breed of American swine is the Victoria, which originated in Indiana. It is a "made-up" breed, produced by crossing Poland-China, Chester White, Berkshire and Suffolk. Nearly fifteen years ago, Mr. George F. Davis, of Lake Co., Indiana, began a systematic course of cross-breeding, with a view of combining the best qualities of each of the four breeds used as foundation stock. Mr. Davis is of English birth, and during his boyhood, on his father's farm, he began breeding fine stock, and acquiring experience, with which he came to this country in his early manhood. In 1878 his efforts in originating a new and improved breed had become so successful that he exhibited specimens at various county fairs in Indiana and Illinois, and in the fat-stock show at Chicago. They were, of course, exhibited as grades, and in that class continued to be shown for several years. In the Chicago fat-stock show of 1881, five of them exhibited by Mr. Davis were awarded the grand special premium of $125, as the best five hogs shown. This triumph won for those grades a place in the Illinois State Fair, with the



ROSEWOOD.

class of Chester Whites, and several blue and white ribbons were carried off by them. In the meantime, however, Col. F. D. Curtis, of Kirby Homestead, New York, working on very nearly the same lines as Mr. Davis, had brought out a very fine breed of white pigs, to which the name of "Victoria" was given. We believe neither breeder had any knowledge of the other until both breeds were in the field. No one knowing the intelligence and practical skill of Col. Curtis will doubt that his breed must have possessed a high type of excellence. But he turned his attention to the improvement of an older breed, and left the field for Victorias to his Western rival.

The Victorias of Mr. Davis have been bred carefully and kept before the public by exhibition and advertising. In 1885 a distinct class was provided for them by the Iowa Agricultural Society, and in most other States they are now placed upon the same footing as any of the recognized breeds. The Victoria Swine Breeders' Association was organized for the purpose of promoting pure breeding of this class of swine, and the publication of a record. The first volume was published in 1887. The points claimed for the breed are as follows: "Color, white, with occasional dark spots in the skin; head, small, broad, and face dished medium; ears fine, pointing forward; jowl, medium size and neat; neck, short, full, and well arched; shoulders, broad and deep; girth around heart, large; back, straight, broad and level; sides, deep and full; ribs, well sprung; loin, broad and strong; flank, well let down; ham, broad, full and deep, without loose fat; tail, medium, fine, and curled; legs, fine and straight; feet, small; hair, fine and silky, free from bristles; action, easy and graceful; symmetry, adaptation of the several parts to each other."

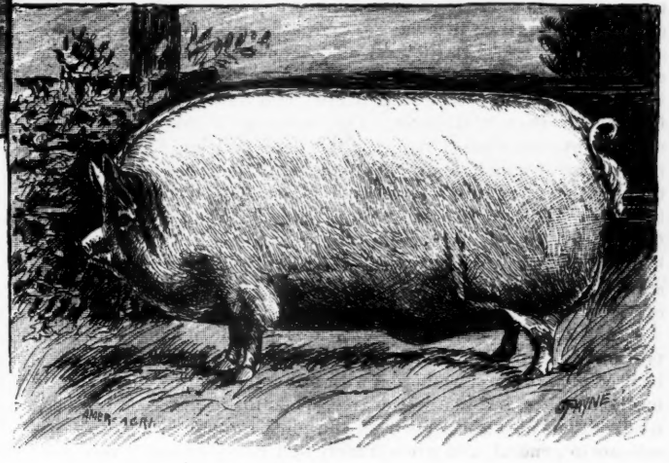
The accompanying illustrations are portraits from life. One is the sow Rosewood 2d, winner of three first and one second premium in Western State Fairs. The other is the boar Dandy, winner of the first premiums and sweepstakes at the World's Fair, New Orleans.

**Preparing for Spring Flowers.** — Beds which have contained gladiolus, tuberose, and other summer-blooming bulbs, should be made to serve a double purpose. Before very severe frosts come remove these summer bulbs, dry them off carefully and store away for winter. Then work the beds over, giving an additional dressing of rich compost, and put in crocus bulbs. Set them three or four inches apart each way, press them well down into the soil, and when the ground begins to freeze cover the bed with a good coat of coarse litter. Through this the welcome flowers will peep up in the spring, almost before the last snows are gone. On a good lawn a pretty effect may also be had with crocuses by inserting them at random in the turf, where they will make bright and welcome reliefs of color against the uniform green.

## TO RAISE AND KEEP ONION SETS.

O. MOFFAT, IOWA.

Onion sets are of two kinds—the top sets or buttons, and bottom sets, or those raised directly from the seed. It is of the latter that I propose to treat. First, select the very best possible piece of ground, and put it in the highest condition. Form a bed fourteen to eighteen feet wide; put a broad board upon this, to stand upon while at work; then have prepared a slat two inches wide and one inch thick; make the rows of suitable distance apart for convenience in working; lay this slat crosswise the bed; stand or walk upon it enough to press it an inch into the fine, mellow soil; this makes a straight, smooth trench in which to sow the seed; then sow by hand enough seed to cover the bottom of this trench, taking special pains to fill up the corners. We thus have here a broad, straight row, without ragged edges, which enables us to work up close to the plants. The crop should now have close and constant cultivation until the tops turn yellow; then harvest and grade them into suitable sizes, the most desirable size being about that of hazelnuts. I run them through a screen or coarse sieve. If all goes well, it will be interesting to see how liberally they yield, and "bulge" themselves up in the rows, abundantly rewarding the labor



DANDY.

given to them. To keep the sets through winter is somewhat difficult, yet need not differ essentially from ordinary onions. The most suitable place is an upper story of a brick building, with good ventilation. But they may be placed in a barn-loft, or any cool, dry place, until cold weather, when they are to be moved into a cellar. The most important points are to maintain as even temperature as possible, and good ventilation; a little freezing will not hurt them. It is very damaging to allow them to sprout. For storing, prepare shallow boxes with both sides and bottoms. Place these boxes on something that will elevate them sufficiently for air to pass underneath. The boxes may be placed on each other crosswise.

## NUGGETS FROM PRACTICAL EXPERIENCE.

Scant feeding is gross extravagance.

Buying hay caps may be a species of gambling with the weather, but they are good lottery tickets to hold.

If cultivation is of the right character it cannot be too early or too often. This is true outside the corn field also.

It is of no use to expect to make money in the chicken business unless you are willing to watch every want of the fowls; unless you are willing to work early and late; and, unless you are fond of poultry. The details are minute, but each one is important and they all lead to success, if rightly followed.

## LEGUMINOUS PLANTS FOR PASTURE LAND.

JOHN J. WILLIS, SUPERINTENDENT OF LAWES AND GILBERT'S EXPERIMENT STATION, ROTHAMSTED, ENGLAND.

Next in importance to the grasses in the mixed herbage of pasture-land are the leguminous or clover plants. Though containing a larger proportion of nitrogen in their composition than the grasses, we find that they are not specially benefited by nitrogenous manures, as are the cereals. At Rothamsted, as shown in the table illustrating the botanical composition of the mixed herbages of grass-land, the largest proportionate quantities of *Leguminosæ* occur on the plot to which mineral manure containing potash is applied. Seasonal characteristics, even when favorable to these plants, do not suffice to overcome the injurious effects of some manures, as during many years of varying character as to climate, they have been practically banished from the highly-manured plots.

### TRIFOLIUM REPENS.

The common white or Dutch clover has a long, deeply-penetrating tap-root, and when once established, it soon covers the ground. The character of the plant differs materially, according to the soil on which it grows. It prospers on mellow land containing lime, and on all soils rich in humus, and forms a very prominent feature in all the old ox pastures of England. The effects of a manurial application are that ammonium salts soon reduces the plant to insignificant proportions. Nitrate of soda is slightly better in its effect, but both these nitrogenous manures result in a smaller growth of white clover than when the land is left unmanured. Mineral manures, especially potash and gypsum, with a small quantity of nitrate, considerably augment its growth, as also do dressings of marl or wood ashes.

### TRIFOLIUM PRATENSE.

The ordinary red clover of grass-land is a tufted, very deeply-rooting perennial, with numerous long, thick, tap-shaped roots, more or less branched and with thick, wavy fibrils. Its growth begins in early spring; it flowers and ripens seed both in the summer and autumn. The structural characteristics favorable to the growth of this plant are: its powerful deep-rooting habit, enabling it to get food from considerable depths, and thereby also preserving it from the effects of drought. The varieties of this plant may be divided into two classes, namely: the perennial and biennial sorts, the former of which comprehends those of most permanent duration, and such as are best adapted for sowing in permanent pastures; the latter such as are most suitable for alternate husbandry, from their being of shorter duration. To these, however, the term biennial is not strictly applicable, as, under favorable circumstances, the most short-lived varieties are found to last for a series of years.

In the Rothamsted grass-plots it is practically absent on the portions of land where ammonium salts are applied, whether these be used alone or in conjunction with mineral manures. This species has gone down, but in a less degree, when nitrate of soda has been used. It has also gone down on the plots most favorable to *Leguminosæ* in general, and when it increased considerably in the early years of the experiments—namely, those when mixed mineral manure, including potash, was employed. Finally, it has maintained a more uniform position on the unmanured plot, where there is no luxuriance of any species, than anywhere else; but even here, in the later years, it has only contributed about two per cent of the total produce. It has, however, sustained the competition of other species much better than the white clover.

### LOTUS CORNICULATUS.

This is the common bird's-foot trefoil, a stout rooting species, well deserving of a more extended cultivation on light, dry and high, elevated inferior soils, where it will yield a greater bulk of herbage than many of the cultivated clovers. On the exhausted unmanured plots at Rothamsted it has shown a marked increase, constituting as much as six per cent of the whole herbage; on the plot receiving superphosphate alone, and with a mixed mineral manure without potash, this plant has also shown a tendency to increase rather than to diminish in quantity.

When the mixed mineral manure, including potash, is applied, it is the more surface-rooting *Lathyrus pratensis* or meadow pea, that prominently represents leguminous growth; and it is only where there is no luxuriance of grasses or of more surface-feeding *Leguminosæ*, that the *Lotus corniculatus*, with its deeper roots, hardy habit and comparative independence of surface food and moisture, appears to be able to maintain or improve its position. It is a highly-nutritive plant, and is eaten with avidity by cattle.

### LATHYRUS PRATENSIS.

This is the meadow pea, a perennial plant with a root stalk greatly differing in character from that of the *Lotus corniculatus*, being very long and slender, creeping, or in some cases descending to considerable depths, but never forming thick, fleshy branches like the lotus. By its comparatively superficial root it is enabled to avail itself more fully than the lotus does of the food in the surface soil. The plant is a general favorite among cattle, hence it has been recommended for being grown on dry soils. Like most of the leguminous species it is not favored by ammoniacal dressings, but at Rothamsted it has been found to increase by the application of 275 pounds of nitrate soda per acre, and more especially when this manure was employed in conjunction with mineral ingredients, particularly potash salts. Without manure, although the actual quantity per acre is small, it has increased rather than diminished in the mixed herbage of the grass-land, but not to the same extent as lotus. The most striking point in the development of lathyrus on the Rothamsted experimental plots is its very great increase when mineral manure, including potash, is used, without nitrogenous manure. The actual percentage of lathyrus in the total herbage was increased during fifteen years from 0.23 to 6.56 per cent where ammonium salts were applied in the earlier years, and a potash manure in the later. It diminished from 8.76 to 2.37 per cent on the plot which received potash salts during the earlier, but not during the later years; and on another plot where mineral manure, including potash, was applied every year, lathyrus contributed 13.51 per cent in the warm, moist season of 1862, only 6.78 per cent in the cold and changeable season of 1867, rising to 36.68 per cent in the variable season of 1872, and falling again to 12.11 per cent in the tardy spring of 1877. It also increased from six per cent to over nine per cent, where a small quantity of nitrate soda, with a mineral manure, including potash, was every year applied. It has likewise increased in a very remarkable degree, in recent years, when nitrate of soda alone was applied from 1856 to 1875 inclusive, but the mixed mineral manure, including potash (without nitrate) each year since. It is obvious, therefore, that potash manure is particularly favorable to the development of this species. And it seems probable from the Rothamsted date that some of the fluctuations in the amount of produce yielded in different seasons by the lathyrus may be explained by its peculiar habit of growth. Its underground development, either of root or stock, is relatively small, as compared with that of most of the grasses or with that of lotus and the clovers. On the other hand, its above-ground growth, its creeping stems, insinuating themselves between their competitors, may go far to explain the fluctuations above recorded.

### THE MISCELLANEOUS PLANTS.

The plants included under this heading comprise, in the mixed herbage of the Rothamsted grass experiments, in all, fifty-nine species (exclusive of fungi), distributed through forty-four genera and twenty families. Representatives of some of these families form a conspicuous portion of the herbage on some of the plots, while on others they are not found at all. The relative proportions also in which they occur are exceedingly different, depending very greatly on manurial agency and association.

### NATURAL ROTATION.

We are in a position to appreciate the facts in reference to what has been called natural alternation or rotation, as a result of the struggle uninfluenced by the artificial conditions induced by manuring. The conditions of success are so variable, even for the same plant at different stages of growth and in different seasons, that we can scarcely predict with any certainty whether any individual species will gain or lose in the conflict; although we may form a fair conclusion as to the prevalence of certain groups of species; as, for instance, the poorer grasses—one or other of them according to the wetness or dryness of the season, and also according to the decline of the freer-growing competition.

The produce of hay at Rothamsted, without manure, has varied from eight to thirty-nine hundred weight per acre, according to season, the average for twenty-five years having been twenty-three hundred weight per acre. The general appearance of the unmanured plots and of the hay produced upon them, is, even but scanty growth, comprising many species of plants, no one plant being specially favored, the weaker kinds here standing on an equal footing with their more strong-growing neighbors.

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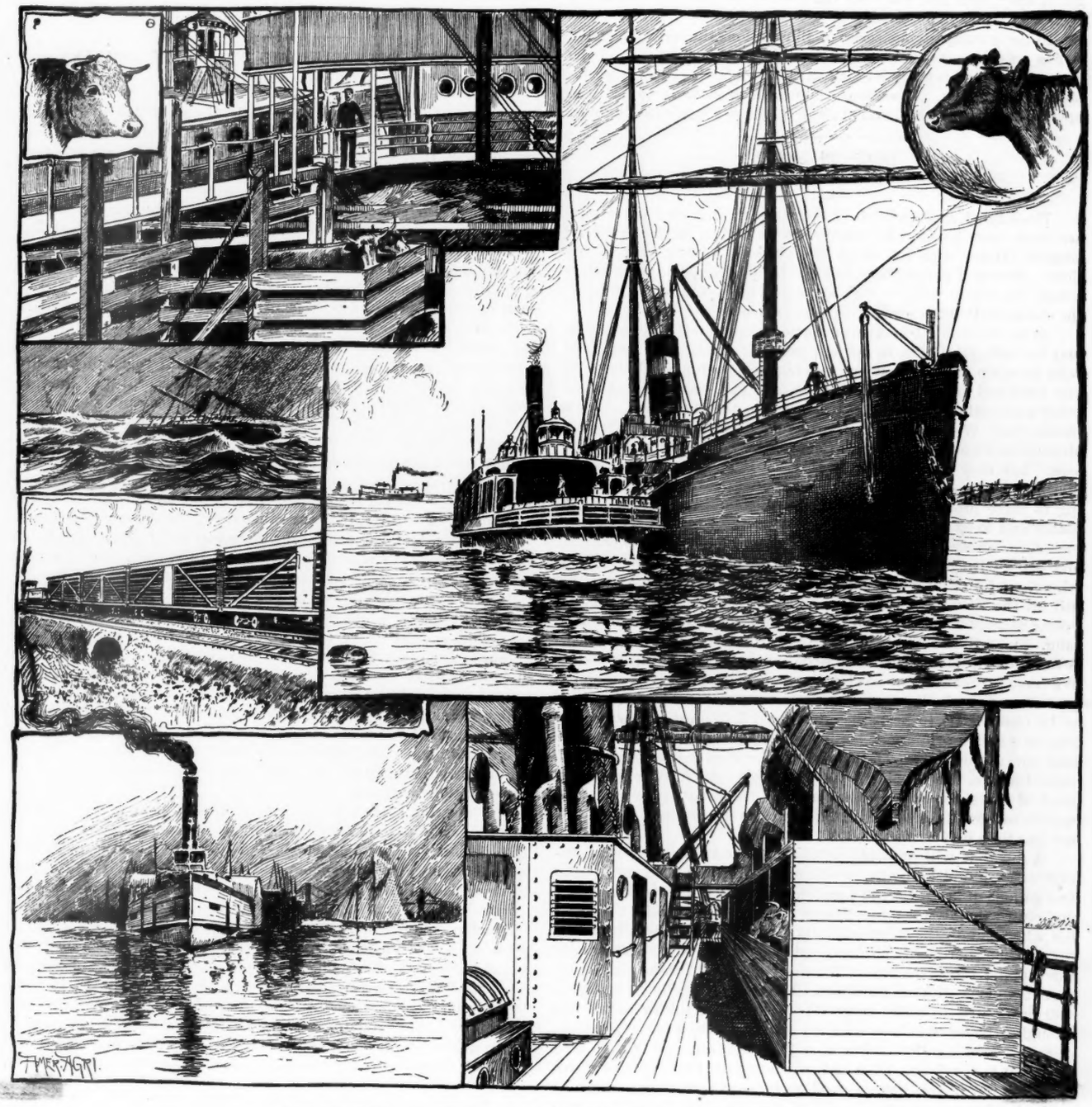
**Good and Bad Seasons.**—It is noticeable that the season gets somewhat of its complexion from the farmer—the good farmer has few bad seasons, and the poor farmer has few good seasons.

## THE EXPORT TRADE IN BEEF CATTLE.

The extent and consequent commercial value of the foreign branch of our live-stock business has induced us to give a brief illustrated *resume* of the modes in use at the port of New York. The vessels used in the business of transportation across the Atlantic are the National, the Anchor, the Wilson and the Hill line. Tramp steamers are occasionally used; but our facts are in relation to the great lines. The Hill fleet consists of the Tower Hill, Ludgate Hill, and Richmond Hill. These vessels are loaded in midstream, through the ports, and also on the upper decks. Gangways are used with high guards, up which the herds are driven from the decks of the tenders which convey the cattle from the yards. The vessels of the National and Anchor lines are also loaded in midstream, and most generally the herds destined for export are shipped as above described; but on some occasions the number of cattle to be forwarded is so heavy that the upper and main decks are not sufficient to accommodate the consignment; then the lower decks are called upon, and even sometimes the hold is turned into a succession of cattle-pens. In such cases, an elevator capable of accommodating two heavy beeves is put into requisition, and the cattle are placed in the car and lowered from the upper car—or from the main deck—as may be. A fleet of five tenders accomplishes the river part of this transportation. Of these, the Colden and Newark each have a capacity of three hundred and twenty beeves in one shipment. The Burlington is regarded as an auxiliary and carries only thirty beeves. All of these transports are side-wheel steamers, and sufficed for a considerable time for the transfer of the export herds; but as years passed on and the traffic increased, two other tenders were added, the Stevens and the McCallum, both of which are screw steamers, or, as sometimes called, propellers. The system of shipping cattle is now so well understood that five hundred beeves can be loaded in two hours, and that without distress to the men engaged.



SHIPPING CATTLE IN NEW YORK HARBOR.

The difficulties of ocean transit are also reduced to a minimum. Very few deaths occur from the pitching or rolling of the vessels in mid-ocean. Beeves are much less restive at sea than are horses, even when on the upper deck. Steers, when washed by the great waves, will calmly lie close to where they are tethered, and bow their heads as the wave crosses over them; and, when the waters

have retreated, look up, but will never attempt to rise until they perceive the danger to be over. At the first dash of a wave, the horse that is exposed to its violence becomes alarmed, and if not securely protected in a stout, well-padded box, will, in his terror, fight and struggle until death ends the unequal conflict. Sheep are a most timid cargo, and as the vessel rolls will crowd down on one another, so that, unless judiciously separated, they will trample on, and the stronger kill, the weaker. Hogs lie like grain in the hold of a vessel, and, at sea in rough weather, are a most dangerous cargo, as they shift and roll with the motion of the ship, and never even try to right themselves.

In the accompanying series of illustrations the central portion shows an ocean steamer receiving cattle from a lighter. At the upper right-hand is a partial view of the deck with an elevator containing two steers. A section of upper-deck stalls is seen in the lower right-hand corner, and at the left of it is a side-wheel lighter.

## TICKS ON SHEEP.

JOSEPH HARRIS.

The English mutton herds of sheep and their grades and crosses are much more liable to be troubled by ticks than Merinos. Every English farmer dips his sheep two or three times a year to kill ticks. Scores of preparations are sold for this purpose, and men go round from farm to farm with a convenient apparatus for dipping the sheep, and do the work at so much a head.

As to the relative merits of mutton sheep and Merinos much may be said. But that is not our purpose at this time; what we wish to say now is, if you are keeping any open-wooled sheep of any kind and have not dipped them this fall, do not let another week pass without doing so. It is cruel to the sheep and a great loss to you. We once visited a farmer in Maine who had given up Merinos and was keeping grade Cotswolds. "I feed them well," he said, "but they do not seem to thrive. It does not pay to keep Merinos for wool alone, and then grade Cotswolds are not going to prove profitable. I think I shall have to give up sheep altogether and keep more cows." This was in the winter. We caught one of the sheep and on opening the fleece found it literally alive and black with ticks. We have found many such instances elsewhere. Before winter sets in sheep should be dipped twice; once to kill all the ticks, and again, two or three weeks later, to kill the young ticks hatched out from the eggs laid previous to the first dipping. This will effectually cure the evil. The ticks are easily killed. A favorite dip is made from tobacco stems or from cheap tobacco. We have for many years used a dip made of a pound of soap and a pint of crude carbolic acid to fifty gallons of water. The only point to be observed is to keep the mixture well thinned. Dissolve the soap in a gallon or more of boiling water and add the carbolic acid and stir thoroughly. Then mix with water in the proportion named above. In dipping let some trusty man have hold of the head of the sheep and see that none of the mixture gets into the mouth, or nostrils, or eyes. Each sheep should be held in the dip not less than half a minute.

A dip that will probably be more conveniently made is a mixture of soap and kerosene, or skimmed milk and kerosene. Take two gallons of kerosene and a gallon of milk. Put them in a churn and churn rapidly for ten or fifteen minutes. If the milk is boiling hot when put in the churn with the kerosene it will be all the better. When thoroughly churned put two gallons of the emulsion in the dipping tub or barrel with twenty gallons of water, stir it up, and commence dipping the sheep. The reserved gallon of emulsion will be needed to make more dip to keep the tub or barrel full enough to cover the sheep. In our own trials we used soap instead of milk. Boil a gallon of water, and put in it a pound of soap, and stir till it is dissolved. Then add two gallons of kerosene and churn as before, or, if you have a good syringe or force pump, churn it with that for ten minutes, or till all the oil is "cut," and the emulsion is complete. It is not improbable that with so much soap as above recommended the dip may need to be a little stronger,—say one gallon of the emulsion to eight gallons of water. We like to use plenty of soap to avoid any possible injury to the wool. A pound of white hellebore powder to each two gallons of soap and kerosene emulsion makes a dip that finishes the ticks in a few minutes. The dip without the hellebore will do the work. You will find no live ticks the next morning, and there is some reason to believe that it will kill the eggs also. But it is always safer and better to give a second dipping in two or three weeks, and be sure you dip every sheep in the flock.

It may be thought that we should tell how much dip will be needed for a given number of sheep. It is not easy to do so. It requires almost as much dip for one sheep as for a dozen. You will need to have the tub or barrel full enough to cover the sheep. Much will depend on the size of the sheep and the size of the tub or barrel. You will probably have at least twenty gallons to start with. How much more will be required to replenish the dip will depend on how much care you bestow on squeezing out the dip from the fleece when the sheep is taken out. Kerosene is cheap, and it is better to have too much dip than too little, for if you get short some of the last sheep will not be thoroughly dipped.

## THE MOST PROFITABLE TIME TO MARKET CHICKENS.

MIDY MORGAN.

This subject has been so frequently discussed that to arrive at a trustworthy and valuable conclusion we have had a careful survey made of reliable market reports. The results we place before our readers: The varying prices throughout the year go to demonstrate that it is quality, not quantity, which makes the rate. Our researches also show that chickens of good quality are always scarce; further, that bad packing, careless handling, slaughtering when the crops of the birds are full of feed, all tend towards, and frequently unite in, placing on the market an unsalable product, which if it had been properly handled might have reached the consumer in such condition as to have been attractive at a fairly remunerative price to the producer. Very early chickens are not much sought for, as then the markets are well supplied with game. A little later, when game becomes scarce and the quality indifferent, chickens are in active demand. Taking as one year the dates of July 4, 1888, to June 25, 1889, the list of prices varies from 6 to 50 cents per pound, for dressed chickens. Wide as is this range, the difference in quality represented is wider still. The lowest price for the year under review was reported on June 2, 1889, when the range was 6 to 15 cents per pound; the highest price was on April 17, when the range was 28 to 50 cents per pound, and these prices continued steady for two weeks. On May 1, 1889, the range was 28 to 45 cents per pound. These values declined until June 25, when the range was 9 to 23 cents per pound. The first two weeks of July, 1888, chickens were steady at 23 to 35 cents per pound; the markets weakened for the following two weeks; prices ranged from 15 to 26 cents per pound. The quality of the chickens offered in December was so poor that sales were slow at the very low range of 7 to 13 cents per pound; in January, 1889, prices ranged from 5 to 17 cents per pound. These quotations mark the dates when producers may, with a fair hope of success, meet a demand for well-fatted chickens. In April, broilers which weigh from 2½ to 3½ pounds are always in brisk demand, and indeed, until the end of the second week in June, city hotels and restaurants consume large weekly supplies of broiling chickens. After this latter date the wealthy New Yorkers travel and the city consumption decreases.

While this part of the poultry trade and the poultry-breeders' mission is before us it seems to be in place to give a word or two to the subject of fattening capons. These choice birds were first quoted January 23, 1889; from that date until May 15, 1889, capons were continually in good demand at a range of 17 to 27 cents per pound, which is a marked contrast to the price of cockerels which sold where offered at 6 to 7½ cents per pound. Old fowls are liked by a portion of our foreign population, so that a reasonable price can be obtained all through the year for fowls that are fat and well-handled. The extreme range for the year was 5 to 16 cents per pound. Fowls when alive sell more freely than any other sort of poultry; they are hardier than chickens and recover more quickly from the fatigues incident on transit; feeders in New Jersey and on Long Island annually buy large numbers of live Western fowls, which they fatten and slaughter to order.

There is a steady demand for fat ducks in the New York markets which is rarely met. Ducks abound, but they are muscular old birds or lean ducklings. The desired medium of plump ducks from ten to twelve weeks old seems never to be obtained. About the thirteenth week ducks moult their first plumage, and until the second growth of feathers is attained ducks are lean and flabby, and even on a most generous diet will not keep or grow fat.

With these data before us it still remains to be said that as a nation Americans prefer turkeys to any other variety of poultry; therefore, the poultry-breeder must keep this fact clearly in mind. There is already annually a vast over-supply of refuse poultry, chickens, ducks, turkeys and even geese, at Thanksgiving time, and

at Christmas-tide they actually litter the sidewalks of the down-town streets, while they hamper the stores of wholesale dealers. Until provision has been made to transport dressed poultry in properly-refrigerated cars, and to keep the surplus in well-ventilated cold-storage, the poultry trade will present phases of serious loss. Even should New Jersey, as she well could, place annually on the New York markets such a liberal supply of dressed poultry of excellent quality, loss would ensue should no adequate market facilities be at hand. There are many hucksters who deal only in sour, overheated poultry; their trade is at times a large and profitable one. These same hucksters buy up what customers will not take; these refuse carcasses are dangerous to health, and the production of such an overplus must cause loss to both breeder and shipper.

## THE HAMBLETONIAN-MORGAN CROSS.

There is a very prevalent idea among those who look only at the surface of things that the Morgan horses have "run out." It is natural that this should be believed by those who are old enough to remember the wide-spread popularity of the Morgans thirty and forty years ago, and who hear so little of them now. Daniel Lambert is sometimes spoken of as "the last of the Morgans." In fact, he was the last direct descendant of Sherman Morgan to achieve, without the aid of other trotting blood, any great celebrity, either by his own performance in the trotting-ring or as the sire of trotters. He was the sire of thirty-two trotters and one pacer, with records of 2.30 or better. He died on the 29th of last June, at the ripe age of thirty-one years. But the Morgan line did not perish with him, nor has the Morgan blood "run out." It is diffused through the best road-horse families in the country. A cross of Morgan blood, three or four removes back, seems to strengthen and improve every strain it has been tried on. Examples of this are found in Kentucky Prince and his great son Guy, in Mambrino King, "the handsomest horse in the world," and in many of the best breeding establishments of the country. The young stallion Foxwood, illustrated herewith, is a fair average specimen of the Hambletonian-Morgan cross. He attracted much attention, and was awarded the second prize of his class, in the New York Horse Show last autumn. The sire of Foxwood is Nutwood, the famous half-brother of Maud S., and the dam was Lady Foxie by Daniel Lambert. Foxwood was foaled in 1884; is a chestnut horse, fifteen hands high, and weighs something less than 1000 pounds. In color, form and action he strongly resembles his sire, while his full eye and general intelligence show his descent from Daniel Lambert. It is reasonable to look for some good ones among the progeny of a horse which unites in his veins the blood of Nutwood and Daniel Lambert.

THE ROAD STALLION FOXWOOD.

**Impure Air in the Stables.**—Now that horses will be stabled at night, or should be, the most perfect cleanliness should be observed. The floors, if of wood, should be frequently drenched with water, and then sprinkled with finely-ground gypsum (plaster), by which the strong, pungent odor common to stables will be neutralized and absorbed. This strong odor of ammonia, which often pains the eyes and nostrils of a man, is exceedingly injurious to horses. It rots leather and corrodes varnish, and what must be its effect on the eyes and lungs of the horses confined in it during whole nights? Foul air promotes glanders, farcy, blindness, influenza (epizoötic), pneumonia, heaves, all common diseases of horses; and the acrid manure in which horses are compelled to stand causes not only this injurious vapor but rots the hoofs and irritates the skin.

## IRRIGATION IN HUMID CLIMATES.

RALPH S. TARR.

The hay crop this year has been very good. On account of the abundant rains, many farmers have been unable to get the hay into the barn while it was in the best condition; but the crop has been heavier than for many years, and the failure to harvest it has been an unfortunate accident in some cases; in others the result of bad judgment.

It seems to me that this year's experience may teach a lesson which it will be well to heed. As I have traveled through the New England farming districts this summer, and watched the wonderful growth of grass, I have observed that the key to the luxuriant growth of grass has been an abundance of rain. Recalling previous years, I can remember seasons when in midsummer the grass was dry, short, and altogether sickly-looking; and these seasons were seasons of drought. It seems, therefore, according as the season is dry or moist, that the crop of hay is abundant or limited; in some years the crop being double, or even more than double, that of the previous year. What is needed, then, is more water, and it is within the power of one-fourth of the farmers to get more water—in fact, to give their crops water as often as they choose. It may be done by irrigation. In America irrigation is regarded as indicating a dry climate; it is looked upon as a necessity forced upon the people of a country as the only method of growing a crop in a region where Nature has been unkind. Here is one point where the American farmer is behind the European agriculturist. In many parts of Europe—particularly in France and Italy—irrigation is extensively practised as an accessory in districts where the rainfall is as great as in our own Eastern States. It is not an unfortunate necessity, but a thing gladly undertaken on its own merits. It is desirable that some of our Eastern farmers should undertake it and prove its success. The cost of a ditch in our hilly country, where brooks with a rapid slope are abundant, would be trifling, and would consist mainly of labor. The advantages of irrigation are apparent to any one who has seen this kind of farming in practical operation in our Western Territories. Firstly, there is absolute freedom from drought; secondly, by a properly-regulated system of watering, all crops may be made to give much better average yields; thirdly, all water, and especially that which has passed through swamps, contains fertilizing elements, which add greatly to the productiveness of the soil. In New Mexico, where the fertilizing element in the water is exceptionally great, there are patches of ground that have been cultivated by the Indians for hundreds of years without ever being allowed to rest, and without the use of manure.

There are, of course, some disadvantages. There is the extra work required in applying the water; but this would not be great in a well-regulated system. In the arid regions, where the time is limited for using water, it is necessary to work day and night in applying the water, or else the crop is ruined. Under the conditions in our humid climate, there is no necessity for haste. Another necessity is a system of drainage to accompany the irrigation. This is a disadvantage in that it requires some extra work, and perhaps an expenditure of money. On the other hand, it is an advantage from a sanitary point of view, for in every well-drained farm we have an increased assurance of healthfulness.

Easier for you and better for the tree to use your thumb in summer on supernumerary shoots than to use the knife next spring.

## THE NEW ZEALAND FLAX AT HOME.

Those familiar with greenhouse plants will recall the New Zealand flax, *Phormium tenax*, especially a form with variegated leaves, used for house decoration, and planted out in summer for its tropical effects. It is a plant of the Lily Family, with sword-shaped leaves overlapping one another, after the manner of the leaves of an Iris, as seen in the engraving. Indeed, the plant appears somewhat like a gigantic Iris, with its clumps of leaves, three to six feet or more high. Some half a dozen or more species have been described, but the best botanical authorities regard them all as varieties of the original species, discovered by Captain Cook, *Phormium tenax*. The one most common in greenhouses is the variegated form of this, the green leaves of which have abundant lengthwise stripes of yellow and white. The flowers are of a yellow or dull orange color, on branching peduncles from six to sixteen feet high, but not very ornamental. The leaves contain a fibre of remarkable strength, which was much used by the natives for various domestic purposes. They wove very durable baskets from it, whence the generic name *Phormium*, from the Greek word for basket. The fibre has not been utilized in other countries to a great extent, on account of the difficulty of separating it. Of late years methods of separating the fibre have been devised, and it has become an article of considerable importance in commerce. Our correspondent, Mr. W. Orpet, an intelligent young English gardener, who has recently established himself not far from Auckland, N. Z., writes us: "There is quite a boom here just now in flax, the much-abused *Phormium tenax*. This has suddenly raised in price from 10s. (ten shillings) to £1 (one pound) per ton for the green leaves, while the price for the dressed fiber has gone up from about £20 to £35. There have been two steam-mills started in the next town since I last wrote, and another is being talked of. Although they make a very disagreeable noise, they circulate a lot of cash, and the owners are rapidly making piles, both of money and refuse. This refuse consists of the strippings of the green leaves, which, when well rotted, makes a grand manure. The wet, swampy land on which the flax is found growing has of late increased wonderfully in value, and people who have paid thousands

NEW ZEALAND FLAX.

of pounds to eradicate the weed now talk of cultivating it. The flax to supply the mills is nearly all cut by the native *Maories*, who often pay Europeans a royalty of five shillings per ton for the right of cutting it on their land. The Europeans themselves are beginning to follow their example, as it is easy enough to cut a ton a day, if it is anything like good flax. You can imagine that this flax boom is a real good thing for us, which, after all, is caused by the Yankees making a 'corner' in Manila and hemp."

## TOMATOES AND CUCUMBERS GROWN IN BARRELS.

During the present season the writer has raised early cucumbers and tomatoes in a small way, in old lime or cement barrels, according to the following method: The bottom and bilge hoops were well nailed, an inch hole bored in the bottom, and the barrel was filled with well-rotted stable manure, and packed down so that it was about half full. Three or four inches of good rich soil was added, and about a dozen white spine cucumber seeds planted; scattering them well around. The top was covered with a piece of coarse unbleached muslin, sewed to a hoop large enough to go down two or three inches over the top of the barrel, to keep it in place and prevent its being blown off. This acts as a hot-bed or forcing-frame, and protects from frosts. It was kept well watered, and in the middle of sunny days the cover was lifted to give air. In very cold weather some old coarse bagging, or straw, was put on top, but not too much, as it would smother the plants.

TOMATOES GROWN IN A BARREL.

When the plants were well started they were thinned out, leaving from four to six of the strongest. When the danger of frost was over the muslin was removed and the barrel covered with mosquito netting, to keep out the striped bugs. As the vines grow, they trail over the top of the barrel, running down around the sides. A similar arrangement was employed for tomatoes, thinning them out to three plants. By this arrangement these vegetables were obtained much earlier than in the open ground.

## PREPARING FOR WINTER.

JAMES K. REEVE, OHIO.

The most important work of the market-gardener during October is to see that his winter crops are gathered in due time and safely stored. Bulky crops, such as cabbages and turnips, may best be cared for in the field where grown. For cabbages, select the most elevated portions of the field, points from which the water runs off freely. Open deep furrows, having first cleared a space of the growing cabbage, say five feet apart. Pull up all that have made solid heads, working to a convenient distance on each side the furrows, and place them close together in the furrow, head downward and roots in the air. It will be found most convenient to work at one time a "land" of about ten rows width, having the furrows in the center and carrying to it from either side. If the weather is cold, and freezing nights are indicated, a light covering of soil should be thrown over the row from each side at once. Two or three inches of earth will be enough for the present, as the point to aim at is to keep it as cool as possible without allowing it to freeze. It must be watched carefully, and as the degree of cold intensifies it must be securely covered by throwing heavy furrows up against it. If there are soft heads of a size that seem to be worth saving, they should be put in rows by themselves and given the same treatment. If left until late winter or spring (they need not be disturbed until the others are all sold), the larger portion of them will be found to have made solid heads. If it is the intention to market them continuously through the winter, a supply for immediate use may be put in the cellar; not more than a couple of hundred should be put in a pile, else they may heat and spoil. Subsequently, every thaw may be taken advantage of for getting out a quantity with which to replace this supply.

In harvesting turnips, where sown broadcast, there is but one way in which expeditious work can be done. Again laying off a "land," say forty feet square, begin at the center of this to pull the turnips by hand and throw them into a ring, or hollow circle, the roots toward the center and tops outside. With a fair yield each of these plots should have from five to ten bushels, as many as it is desirable to put into a single pit. As soon as a ring is completed, commence topping, using a sharp knife, and cutting the tops at least a half inch from the flesh of the turnip. As fast as topped throw the roots to the center of the ring, and when completed

throw the tops over the pile for a temporary covering from the sun. The topping and covering should be done as fast as each ring is completed, as exposure to the sun and air will speedily wilt and injure the roots, and by wilting the tops also will make them more difficult to cut. The tops will do for a temporary covering against the sun in the day time and will also protect against a slight freeze at night. But as soon as possible some straw or fodder should be substituted, as the tops piled thus will commence to rot in a short time. Over the straw a little soil should be thrown at once, and a heavier covering upon the nearer approach of winter. A ditch with a drain to carry off surface water should also be dug about the bottom of each pile at once.

Potatoes may be put in piles in the field and covered in the same manner as turnips; but if covered too deeply they are inclined to heat and rot; are spoiled if frosted in the least, through the covering being too light; and are also apt to rot during any protracted spell of warm, wet weather. A better method is to store them in a cool, dry cellar, in barrels, or better still, spread out not more than a foot deep on an elevated floor or staging.

The banking up of late celery will continue almost until the ground freezes. If, as a cap-sheaf, a couple of inches of straw, fodder, or coarse dry manure is scattered along the tops of the rows, and a little earth thrown upon this, the celery may be kept in good condition as late as the first of February.

## THE BUFFALO BERRY AND ITS JAPANESE COUSIN.

One of the handsomest of our indigenous shrubs is the Buffalo Berry (*Shepherdia argentea*). It is a native of the central region extending from near the Mexican boundary northward to the Canadian provinces. It is quite common on the banks of the Missouri west of Fort Buford, and of other rivers in Montana and Wyoming. It has been sparingly introduced into cultivation, but has never met with the favor which might be expected for a shrub which combines so much beauty and utility.

The Buffalo Berry is a shrub or small tree, with oblong, obtuse leaves, silvery on both sides. The ends of the branchlets are beset with sharp, thorn-like terminations. The species is dicœcious—that is, it bears its male and female flowers on separate plants. The staminate or male flowers are silvery outside, like the leaves. The pistillate or female flowers are quite inconspicuous. The fruit, which grows in dense clusters, is scarlet, with a sprightly, acid flavor. It is used by settlers to make a jelly, which is not inferior to the best made from currants. Fig. 1 shows a branch with fruit and staminate flowers.

The shrub is highly ornamental, especially in late summer, when the scarlet clusters of fruit, showing through the silvery-white foliage, have a unique effect on the lawn. The thorn-like branchlets give it value as a hedge plant. The fruit is scarcely inferior to currants, either in amount or flavor. The Shepherdia is propagated readily from seeds. Being dicœcious, it is necessary to see that at least one staminate plant is supplied for every five or six pistallate at most, or there will be no fruit. Neglect of this precaution has doubtless had some influence in creating unjust prejudice against the shrub. It is perfectly hardy, flourishing from New Mexico to the remote Northwest.

FIG. 2. ELÆAGNUS LONGIPES.

The *Elæagnus longipes* is a member of the same botanical Family (*Elæagnaceæ*) as the Buffalo Berry. It is a native of Japan, and was first made known to the American public by the late Dr. Asa Gray, thirty years ago. Our illustration, Fig. 2, was engraved after a photograph of a branch from a shrub growing on the grounds of Mr. Charles A. Dana, Dosoris Island, in Long Island Sound. The plant is a low, spreading shrub, of great beauty. The leaves are smooth and dark green on the upper surface, and silvery below. The flowers are small, yellow, and pendant upon long pedicels. The fruit is bright scarlet, with white dots, larger than that of the Buffalo Berry, juicy, of brisk, agreeable, acid flavor. The plants are very productive, and well worth cultivation for the fruit alone, aside from the ornamental character of both foliage and fruit. The plant is perfectly hardy in the latitude of New York and Boston, but whether it would endure the same climatic extremes as the American Shepherdia remains to be demonstrated.

FIG. 1. SHEPHERDIA ARGENTEA.

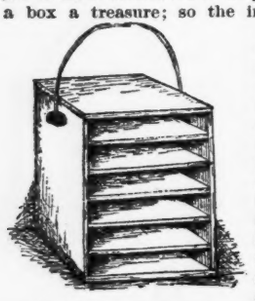
**The Bean Remedy for Potato Bugs.** — An item was extensively published last season, to the effect that a bean seed in each potato hill would keep away the potato beetle. The theory was that the smell of the bean was so obnoxious that the bug would not feed in its vicinity. Having this in mind I have planted this season several rows of late potatoes, alternating with rows of early red valentine beans. The beans were up some time before the potatoes, and, according to the theory, should have acted as "scare-bugs." But as soon as the potato sprouts appeared above ground the omnipresent beetle found them and went to work with his usual activity. Although the bugs confined their depredations to the potatoes I several times found them upon the bean plants, but never any evidence that they had been feeding there. As the pods began to develop on the beans, while the potatoes were in the first stages of growth, I was compelled to desist from applying insecticides for fear of poisoning the beans. Thus, the potatoes bid fair to be a total loss. Has any one else tried the "bean remedy?" K. R. JAMES, Ohio.

**Forcing Hardy Plants.**—A number of hardy herbaceous, as well as woody plants, may be forced easily in the house, and will make attractive window plants. Among the most suitable of these are the Japanese Astilbe, Bleeding Heart, the dwarf Deutzia, and others. The plants should be potted now and left outdoors until severe cold weather sets in.

# THE HOUSEHOLD

## Pie Box.

A very handy contrivance for saving shelf-room is here shown; it is a plate or pie box capable of holding six pies while it occupies only the amount of space usually required for one. Those who have not as much shelf-room as they need will find such a box a treasure; so the inventor assured us, and after seeing it in use recently we knew that it must be so. On baking-day, after the pies were cooled and ready to put away, the box was filled, and, with just one trip to the little shelves conveniently placed in the corner of the landing at the head of the cellar stairs, six pies were snugly stowed away where only one could have been accommodated without it.



CONVENIENT PIE BOX.

"What would you ever do if you had'nt it?" we asked, seeing the crowded little corner shelves.

"Do as I used to, I suppose," was the answer; make three or four trips through the kitchen and dining-room with them and carry four or five of them to the swing-shelf down cellar, and then go after them one by one. That is what I had to do before I had this." When asked about its manufacture she replied: "We had the box—something came in it, I have forgotten what—and standing it on end, you see, the bottom was just large enough to slip large plates in easily; so we tacked five slender cleats in on each side, slipped in the shelves and fastened them with a tack or two apiece, fastened this bail—taken from an old water-pail—to it, and it has been a treasure to me ever since. We fastened the bail close to the top on each side, and just a particle nearer the front than the back, and I have never had to be careful about the pies sliding out. Sometimes I hang the box on the wall, suspending it from those two hooks you see there just far enough apart to come each side of the wooden hand-roll, and so keep it from slipping to one side. I carried one to a neighbor's wooden wedding a while ago, and she thinks a great deal of it."

VINE BORDER.

Perhaps among the readers of the AMERICAN AGRICULTURIST there may be housekeepers who will be pleased to try this simple space-and-labor-saving device.

## Vine for Stripe or Border.

The graceful vine above outlined makes a beautiful border for silk embroidery on velvet, satin, flannel or felt. It is lovely, if worked with gold-color on dark, rich velvet, or in the rich autumnal tints of woodbine or ivy vines on a white, yellow or delicate-tinted ground; velvet so decorated for a long stripe, or border, for a handsome table-scarf would be very pretty. It is also pretty if simply outlined on linen scarfs or tidies with heavy linen thread. The cross-row of dots at each end shows where the vine joins to repeat itself, so that it may be lengthened to any extent.

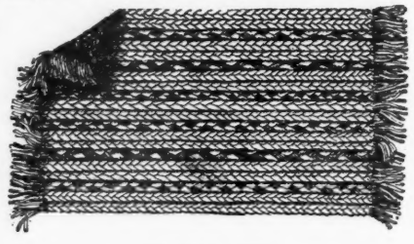
## Basket for Soiled Collars and Cuffs.

This pretty bronzed basket is draped with a peacock-blue plush cover which first has been embroidered with a branch of flowers. It has then been hemmed around the bottom and completed with a worsted ball fringe of the shade of the plush. It is then looped with three deep folds at each side of the basket and fastened there with a rosette of ribbon to match. A small ball-tassel or a bow of ribbon decorates the handle of the basket.

CONVENIENT COLLAR BASKET.

## A New and Handsome Braided Rug.

The pretty braided rug shown in our illustration is a new design much in favor among those who prize home-made rugs, yet find the old-fashioned round-and-round ones rather tiresome. The braids composing it are all of equal length and are sewed evenly together to within about three or four inches of each end, or five inches if the rug is very large. On the wrong side a strong, narrow band of cloth is sewed firmly across each end of the rug, just covering the ends of the seams (as seen in the sketch where the corner turns over; it stays it and keeps it in shape). Then the strands are unbraided as far as the band, and each one cut into two or three narrow strips to form a heavy fringe. Anything suitable for braiding may be used, except very soft or thin cloth that will ravel; gentlemen's light-weight suit goods or old heavy flannel, much fulled, is best.



BRAIDED RUG.

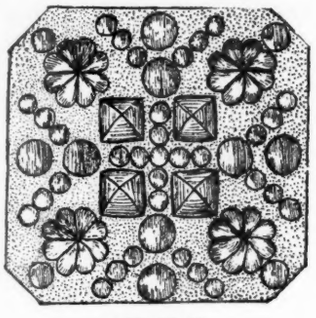
## A Baby Crawler.

One of the most serviceable articles for a baby's use is a crawler. It not only saves the little one's clothes from soil and dirt, but protects the tender feet and legs from unwary draughts, which might prove fatal to the petted darling. Very little money and work need be expended to make a very handsome one. The greatest outlay is for the blanket, which may be of as fine a quality as the mother's taste and purse will admit. A white one with a scarlet and Grecian border is preferable, as the bright colors attract the little one's eyes and hold its attention longer than the dark ones. At irregular intervals over the entire surface have stamped in large-sized patterns, griffins, birds of various kinds, cows and sheep, in fact anything in the way of "beast, bird, flesh or fowl," as seen in our illustration. Outline these in stem stitch with coarse scarlet worsted or, if preferred, coarse rope linen floss. When finished, place it on the floor with baby in the center and you will be astonished to find how long the little one will be diverted, crawling from one figure to another to examine. He will soon learn to distinguish one from another, and to select his favorites.

BABY CRAWLER.

## Nail Embroidery.

A unique embellishment is nail embroidery, used in ornamenting book-covers, baskets, trays, picture frames, chairs and boxes of all descriptions. Usually it is applied on leather or plush, although velvet and cloth or even Canton flannel will answer. This work calls for an endless assortment of fancy-headed nails; large and small, round, square and triangular; flat and conical. Ordinarily, such nails are to be had only in brass; but it is an easy matter to paint some silver, bronze and copper. The greater the variety of form and color of the nails, the more brilliant and gratifying will be the result. This style of decoration offers unlimited scope for originality in designing patterns to be embroidered. Geometrical figures are most suitable: these may be simple or quite complex, according to the ingenuity of the decorator. One form is always suggestive of another, and, after a little practice, surprising effects of symmetrical beauty are planned. It is advisable to first draw the design on paper. Then lay the pattern on the article to be decorated, and put pins where the nails are to be driven. Remove but one pin at a time, make a tiny hole with an awl, and gently drive in the desired nail, using a light tack-hammer. A few examples of the application of these directions will be productive of many new ideas.



CARD TRAY.

A book-cover, or binder for art illustrations and the like, is made by covering two thin pine boards, of equal size and having the desired dimensions, with plush, and lining with silk or satin. Diagonally across the cover nail a piece of plush, of contrasting color, on which has been embroidered or painted the title of the contents. The cover is embellished with nails to suit individual fancy. Form the back, take a piece of flexible thick paper, cover, line and carefully sew on the two leaves of the binder. Tie with a bow of ribbon.

BOOK-COVER.

The ever-acceptable paper-basket is made as fol-

lows: Of thin pine boards cut six pieces of equal size, each being thirteen inches long, and having six inches upper and four inches lower width. Cover with plush and line with tinted wall-paper, which is glued on each piece separately, before being fastened together. The same pattern of embroidery is applied on two pieces; thus, but three different designs are required for the six pieces. After each piece has been decorated and lined, neatly join together by blind stitching. The lower edge being smaller than the upper, a bottom, slipped in from the top, will remain in place without further fastening. A neat tray for cards, or for the writing-desk, to hold inks, pens, etc., is fashioned in this way: Cut a thin board, circular, oblong or square, any desired size. Cover with mahogany leather, and edge with a two-inch border of chamois. Ornament the border and its inner and outer edge with nails. A chair for the library may be handsomely ornamented in this style. Paint and varnish a plain, wooden arm-chair. Make a flat cushion of leather, which is fastened in the chair by means of a fancy border of nail embroidery. Plain wooden tables may be beautified with a border, or by simply ornamenting each or the two diagonally opposite corners.

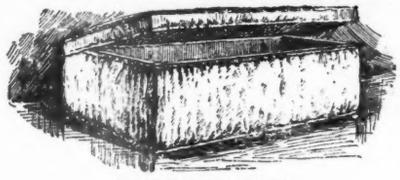
WASTE-BASKET.

This style of work is truly fascinating, and its pursuit involves but little expense.

## A Home-Made Lounge.

The accompanying illustration shows a lounge which is also a receptacle for bed-clothing, wearing apparel, or whatever one may see fit to keep in it. It is a very comfortable piece of furniture to have in the kitchen or sitting-room, and if one does not have a bureau or cupboard in which to store table linen, towels, and things of that sort, it will be found an extremely handy place in which to keep them. It is very convenient for the bedroom also, as it will hold a great deal for which there does not seem to be any place provided, but which must be stored away somewhere if the room is to look neat and tidy. It will prove to be a sort of family trunk. It should be about a foot high, two-and-a-half feet wide and six feet long, with castors fastened to each corner. The cover is hung with stout hinges.

Any man or boy who can make a square box can



HOME-MADE LOUNGE.

make this lounge, for it is simply a box of the dimensions given. The covering is the most particular work about it. This must be put on neatly if the job is to look well when completed. Cretonne makes a good cover. The ends and front should have a strip tacked on just the depth of the box. It is put on a little full to look well. Tack all along the upper edge closely, and cover the tacking with a piece of gimp such as is used on chairs to cover the tack heads. For the top, take a piece of stout cotton cloth and fasten to the back of the cover. Then spread cotton batting, husks, shavings, or whatever happens to be at hand that will make a cushion, over the cover to the depth of eight or ten inches, making it thinner towards the edges. Then draw the cotton cloth over it and pull it down snugly, tacking it all along the front of the cover. If there is enough of this stuffing it will make a nice, elastic cushion, and if the covering is drawn firmly down all around it will hold the stuffing in place. If spread on evenly and the covering drawn down alike all around it makes a smooth, rounded top, which will look well, and be very comfortable to sit on. Over this put a covering of cretonne like that used about the ends and side. It will not be necessary to fasten this anywhere except along the back. Give the lounge a place, if possible, where one end will come in a corner, and make a soft, large pillow for it. Unless it stands in a corner the pillow will be falling off all the time.

## New Pansy Mat.

This illustrates a novel and very handsome piece of fancy work which, though a pansy mat, is very unlike those so long designated by that name. It is a pleasure to fashion one of them if the maker brings to the work a love for the tasteful, natural arrangement of colors, and experience in any kind of fancy work requiring neat, precise touches, and careful handling. I should say, rather, those are the requisite qualities if the pansies are to look, as they should at a little distance, like natural blossoms peeping out in careless confusion from their dark, mossy bed; the mat itself, before the addition of the flowers, is simply a moss mat composed of a soft mass of fluffy, crimped wool of two or three shades of dark moss-green.

The foundation of the mat consists of a circular piece of cardboard large enough to accommodate the vase, lamp, or whatever is to rest upon it, and leave a margin three inches wide all around outside. It is covered with one or two layers of sheet

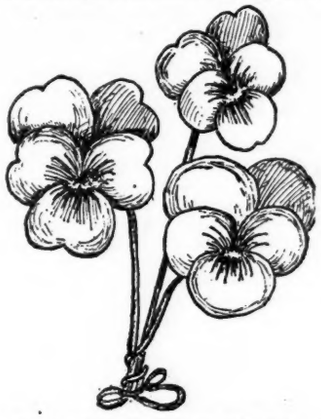


FIG. 1. PANSIES READY FOR MAT.

wadding, then with moss-green velvet or any pretty material chosen, cut large enough to fold over the edge, smoothly applied, folded over and basted.

There are several ways of preparing the moss; as simple and satisfactory a method as any is to knit the zephyr in three strips—one of each shade—about five inches wide and long enough to encircle the foundation, using coarse steel knitting-needles and plain garter-stitch, and binding off the ends when finished. The strips are then scalded, spread smoothly between two cloths, and pressed dry with a hot iron. Each strip is cut in two through the whole length, and converted into crimped fringe by first fastening the three stitches nearest the selvage edge on each bound end with needle and thread, then raveling the remaining stitches throughout the whole length; the fringe will be about three inches deep, with a narrow, knitted heading. Four of these pieces are sewed, one after another, around the foundation, with fringe spreading outward,—the other two are turned the other way so that the fringe turns inward, but when done the moss is tossed back to mingle with the rest and conceal its own heading. Wool shaded in the skein is sometimes used instead of three distinct shades, and that which shades from deep olive-green to yellowish brown or wood color is often chosen.

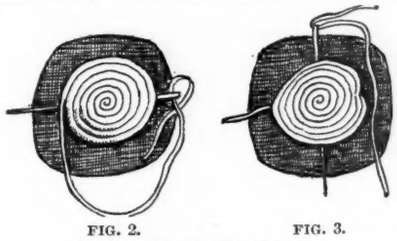


FIG. 2. FIG. 3.

METHOD OF MAKING PETALS.

To make the pansies, select a few knots each of shaded purple and shaded orange or golden-yellow wool, or that which shades from purple to yellow in the same skein; also, a small quantity of wire, for the stems, which should be strong but fine enough to bend and twist easily without breaking; a long, slender worsted-needle; a small piece of cardboard with a needle perforation in the center; and a spool of black silk. Take a natural or pictured pansy that you would like to imitate, select a short needleful of wool to match the odd center petal and thread it in the needle, draw it up through the perforation in the cardboard till only a short bit is left on the under side, and drop the

FIG. 4. FIGS. 5, 6. FIG. 7.

FIG. 4. FINISHED PETAL. FIGS. 5, 6. METHOD OF MAKING CENTER AND STEM. FIG. 7. FOUNDATION FOR VERY LARGE PANSIES.

needle; with the right hand give the wool a little twist close up to the card, which will serve to coil it about itself over the perforation; hold the coil very gently between the finger on the under side of card and the thumb over the coil on the upper side, and slowly turn the card around, letting the wool form a soft, flat coil round-and-round on the card till it is as large as desired for one petal; take up the needle and, still holding the thumb softly over the coil, run it through every thread from right to left through the petal (see Fig. 2), being sure that it passes through the wool where it comes up through the perforation, and does not show on the surface of the petal, and draw the wool through till no loose loop is left outside; cut off the wool an inch from the petal (should a very large one be required run needle and wool through again from side to side as shown by Fig. 3, and clip off both ends even with the outside of the coil; this is *not necessary* for *small* petals) and with the needle point remove it from the card and clip off the bit of wool at the back; this completes one petal (see Fig. 4). Make four more, two pairs, as nearly like the model as possible in color and shape. Practice will enable one to make them circular or oval in form, and with even or indented outlines. The different shapes are shown in the pansies illustrated by Fig. 1. Take a piece of wire five or six inches long and double it in the center over four or five short strands of yellow wool (see Fig. 5), twist the wire close up to the wool, pick out the tuft thus formed with a needle till it is soft and downy, and shear it off about a quarter of an inch from the wire (see Fig. 6); this forms the center of the flow-

FIG. 8. NEW PANSY MAT.

er, which is scarcely seen, and the foundation of the stem. Place the odd petal and the first pair in position around the center and wind green wool a few times around the short wool ends and the wire together, then place the other pair, usually a little larger, at the back of the pair on the stem and wind the green wool around thickly close up to the flower and smoothly down over the stem, and twist it in securely at the end. Hold the flower in shape while, with black silk, stitches of varying length are taken, passing the needle up through the center, and down through the petals; the stitches make them look much more natural and serve to preserve the shape of the pansy upon its stem. However, should the pansy be very large or should it be found difficult to preserve the desired shape, a bit of dark green flannel, shaped like Fig. 7, may first be placed close under the flower around the stem, with ends folded over each other according to dots; then the silk stitches through all will make it firm and strong.

One who is at all inventive will quickly contrive varieties in form and color after making one or two as directed. A great variety of shaded petals may be made by breaking out short lengths of wool just where one color shades quickly to an-

other, thus producing lovely petals with golden centers shading to buff, lavender centers shading to a purple rim, light to deep purple, yellow to purple, lavender to tinted white, or pearl color. When they are grouped in a flower with its spreading black rays they seem to shade from the middle of the flower outward instead of showing round rings of color, as one would suppose. Shades of mauve, bronze, wine, or any color seen in English pansies, may be used also with beautiful results.

Fifteen or twenty pansies will be needed for a mat. Twist two or three together by their stems, twisting out little spreading loops (see Fig. 1), and fasten them to the mat by these loops between the outward and inward turning rows of moss; add the rest in the same manner, or leave a few to be fastened in singly; have stems of varying length and avoid any "set" arrangement; then add a smooth lining to the under side. Toss the inner moss back and give it all a thorough shaking, till it is carelessly light and soft. With good care and an occasional tossing up, a mat like this will last fresh and bright for years. They are especially appropriate for lamps with gilded or bronzed stands, silver or unadorned crystal vases, or any quaint or curious object that is of neutral tint and suitable size. They should never be used with vases holding colored flowers, but, for one containing ferns or grasses, nothing could be prettier. The complete mat is shown in Fig. 8. White or yellow daisies are sometimes used instead of pansies. The method of making them will be given later.

## Autumn Fashions.

October is the month *par excellence* for horseback riding, and to be in good form, it is necessary that the *equestrienne* look as severely trim and compact as possible, all jewelry, fancy neckties and shirt-fronts being scrupulously eschewed. The stylish habit is of smooth-finished cloth, with a plain, perfectly-fitting basque and trousers to match. The preferable colors are black, dark blue, and a green that verges upon black. The skirt is rather short, and in two sections, which are joined by seams at the sides, three darts being taken in the top. Several cross-darts are also introduced to perfect the outlines, but we would not advise a home dress-maker to attempt one of these skirts without a pattern. A piece of stout elastic is fastened beneath the front breadth, and its free end buttoned through a loop, in which the left foot is slipped, to keep the skirt in place. The waist is fitted by double bust darts, under-arm gores, side-back seams, and a curving center seam. The backs fall in a narrow postilion, and the fronts form short double points below the closing. Both basque and sleeves are well wadded and padded. The latter are close coat sleeves. With this plain habit a collar and cuffs of white linen should be worn, rather loose gloves of heavy kid, stitched on the back, and either a Derby or a beaver hat, while the hair is tightly braided and pinned close to the head.

Cashmeres, camel's-hairs, and large serge diagonals are the woolens that will be most worn throughout the fall and early winter, and they come in rich, dull hues, such as rust-red (known as "Eiffel-red"), dark old rose, blue-greens and mouse-gray shades. Solid colors are most fashionable, and it is a feature of the season that each dress pattern is accompanied by trimming woven expressly for it. These trimmings are in tapestry colorings and designs, and consist of a scarf for draping the waist, a panel for the front of the skirt, and a border and corner-pieces that extend a short distance along the bottom of the skirt, after having reached from the belt to the foot.

Scarfs are considered very stylish this season, and should be about eighteen inches in width. They trim a smooth bodice by being put around the neck, shirred in place at the shoulder-seams and at the waist-line, and from there fall on each side to the foot of the skirt.

Gray woolen handkerchief dresses, consisting of eight large squares of some solid color, surrounded by black borders in irregular stripes, come for young ladies, and are prettily made up with the bordering trimming the foot, top and sides of the skirt, and the plain centers being laid in large plaits.

Black woolens also have handkerchief borderings in satinlike stripes; and still more elegant, raised velvet trimmings, in arabesque, palm, and ostrich-feather designs.

Velvet sleeves are a feature of new frocks, and velvet ribbon—particularly in black—will be much used for the trimming of both dresses and bonnets. In walking suits the fullness of the sleeves on the shoulder is retained, but otherwise they are of the plain coat shape, moderately close. The leg-of-mutton and other full sleeves, however, will be popular for house dresses and evening wear.

Accordion-plaited skirts will be somewhat used, worn with a jacket which is tight-fitting in the back, and opens in front over a close-fitting vest, that is crossed by a girdle of silk of the same hue as the woolen goods.

Beautiful passementeries are again shown for trimming heavy silks, and embroidery of all kinds will be much used; so girls cannot better display their skill at needle-work than by embroidering their tea-gowns in conventional patterns, placed at intervals just above the hem, while a novel idea is to sew a narrow, inch-wide ribbon of black gros-grain in and out of the design, in a curving pattern, to resemble a garland.

Capes of light cloth or coarse woolens are the chief wrappings prepared for the autumn, and they are often relieved by a collar and tabs of dark velvet.

Toques are the hats most worn, and wings are the favorite trimming. From two to four slender, pointed wings are placed in the front, and extend back each side against the crown, or else they are massed entirely on the left side, leaving the right very plain. Artificial fruit is also pretty on a hat trimmed with lace, and the imitation currants, cherries, blackberries and grapes will be used late into the fall.

Winter wrappings promise to be long and ample, and largely trimmed with fur, while for these Mattelasse goods and heavy figured cloth will be much in vogue.

Black-ribbon collars are worn on light-hued dresses, and are fastened with small Rhinestone buckles.

Young ladies who wear their hair in a Catogan braid should be careful not to make the plait too long, and should tie it with a black gros-grain ribbon not less than an inch and a half in width. Have the loops as long as the ends, and let the bow stand out rather than fall down. Those who have short, curling love-locks in their necks should comb them up and fasten them to the back of the head with hairpins or a very small comb.

## The Law About Hired Girls.

EDMUND P. KENDRICK.

In England it is the law that when a person hires a domestic servant, unless it is otherwise agreed, the hiring is for a year, and if the employer wishes to discharge the servant before the time has expired, he must give her a month's notice, or a month's pay. So the servant must give a month's notice if she wishes to leave. There is no such law in this country. While it is very frequent for the mistress to expect a week's notice from her servant before she leaves her place, and for the servant to expect a similar notice or a week's pay before discharge, such notice or pay is not required by law. In the absence of any agreement between the parties, the mistress has a right to discharge her servant at any time, with or without good cause, and the servant has a right to leave any time she takes a notion to do so. The fact that a girl is hired at a certain price per week does not require her to work the week out. Such a hiring only fixes the rate of wages, and not the time of service. Therefore, while a "week's notice or a week's pay" may be very proper and commendable, it is not obligatory.

Occasionally, a girl is hired for a certain length of time. In such cases the law is the same as in regard to the hiring of any other class of employes. If the hiring is for more than a year, such a contract must be in writing and signed by the person to be charged, or his or her agent, in order to make it binding. With this exception, a verbal contract is sufficient if it can be proved, and both the employer and the servant are bound by it. A minor, or person under age, is not by law obliged to keep such an agreement. Where such a contract is made by persons of full age, both parties must carry it out till the time has expired, unless the relation of master and servant is sooner dissolved by mutual agreement, or for good cause. As the law in this country presumes that a hiring is for an indefinite length of time, and one which may be ended at any time, by either party, where a person claims a hiring for a definite or certain period, the burden of proving such a hiring is on such person, and not on the other party to prove it was not so. Even if a servant is hired for a certain length of time, the relation of master and servant may be terminated by either, before the expiration of the term of service, for good cause. The following, among others, are good reasons for discharging a hired girl: Willful neglect of duty; gross incivility; refusal to perform the proper duties required of her; prolonged or frequent absence from the house without permission; immorality; gross carelessness; insubordination; inability to do the work for which she is hired, whether occasioned by sickness or other cause; gross uncleanliness; any conduct prejudicial to the safety, comfort or morality of the inmates of the house; or any conduct or acts which indicate moral delinquency on the part of the servant, as the commission of any crime or legal misdemeanor; the contracting of any contagious or loathsome disease, although it may not be severe enough to prevent the servant from performing her usual duties. Incompetency to perform the duties for which she is hired is also a proper ground for discharge, as a person engaging to do the work of a cook, for example, is supposed to contract that she knows how to perform the duties of a cook. If she cannot, it is a breach of her agreement.

Among the valid reasons for abandoning the service of her employer before the expiration of the contract time are: Failure to provide sufficient and wholesome food, or suitable and comfortable lodging; treating her improperly, as by assaulting her; rendering her life so uncomfortable as to make it improper for the servant to submit to it; neglect or refusal to pay wages; requiring her to perform illegal or improper services, or services for which she was not hired; overworking her; exposing her to immoral or improper influences; requiring unnecessary work on Sunday; or, indeed, any act prejudicial to the health, morals, reasonable comfort, safety or health of the servant. Mere harsh language not calculated to injure her reasonable comfort is not sufficient reason for leaving. Slight causes are not sufficient reasons for breaking the agreement on either side; but whether the reasons for dismissal are sufficient or not, the servant is bound to leave peaceably on being ordered to do so, and her remedy is with the courts for damages if she is wrongfully dismissed.

Although a servant is bound to do her work well and her employer may discharge her if she does not, if he continues to keep her in his employment he must pay her the agreed rate of wages, and cannot set up her inability or neglect to do the work properly as a reason for refusing to pay her the contract price of wages. If an agreement is made for a certain sum, that, of course, fixes the amount to be paid. If no sum is agreed on, the servant is entitled to a fair price for such work as she performs, or the customary and usual price for such work at the time and in the locality in which it is performed.

If a servant is taken sick so that she is unable to do her work, she can collect no wages during such sickness. Her employer is not obliged to pay for medical attendance, or to furnish her with medicines, and, in fact, is not bound to board her while she is sick; but if she is allowed to remain in the house and is furnished with meals, she cannot be made to pay for her board unless it is expressly agreed that she will do so.

A servant is expected to exercise due care in the use of her master's property intrusted to her, and in all things connected with her service. If she is careless and breaks dishes, or destroys or injures other property, she is liable for the damage done by her. The law only requires, however, such a degree of care as other persons of ordinary carefulness would use under like circumstances. Dishes will break and accidents will happen in spite of *ordinary* care, and the mere fact of such breakage or accidents at the hands of the domestic will not make her liable, unless she is guilty of undue negligence, or lack of care. Of course, if she willfully and maliciously injures or destroys property, she is liable for the damages, and is also criminally liable.

The employer is bound to see that the servant is not exposed to any extraordinary dangers, that the implements and the materials given her to work with and the place she is to work in are in a safe condition. If she is injured by reason of a neglect of any of these duties, she being herself in the exercise of due care, the employer is liable. For example, if a servant is given a defective step-ladder on which to stand while washing windows, and as a result of the defect she falls and is injured,

her employer would ordinarily be liable; but if the servant knew of the defect, or with ordinary caution should have known of it, or if the accident would not have happened if she had used proper carefulness in all things, her want of due care contributed to the injury, and she cannot recover.

As the financial disputes between the employer and the domestic servant are usually concerning a comparatively trifling amount, it is generally better to compromise, or yield one's claim, than to expend a much larger amount with its attendant trouble and publicity in an appeal to the courts.

## Birds of Our Glen.

MRS. J. N. WARD, CALIFORNIA.

Nearly every lover of nature has some one or more favorite haunts where he delights to linger—

BLACK-HEADED GROSBEAK.

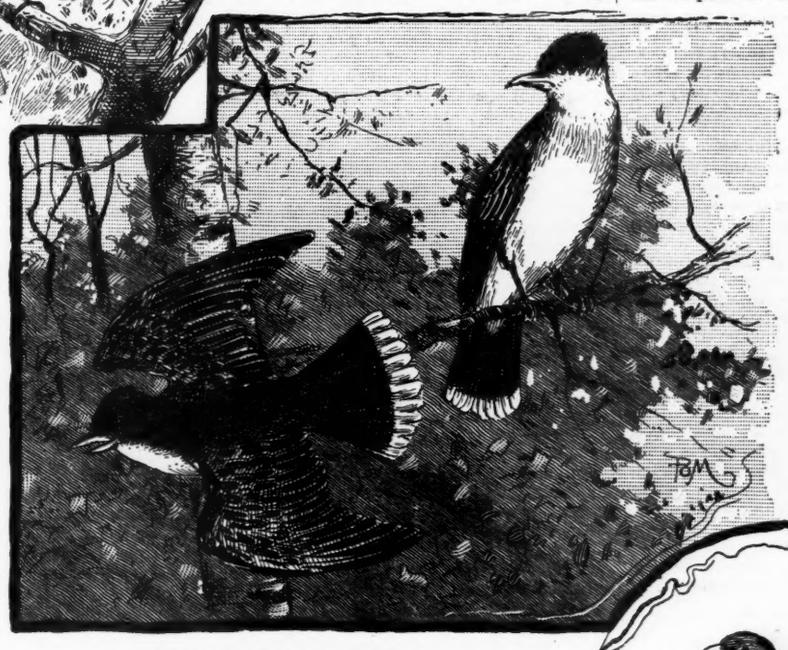
where the birds sing sweeter, the flowers seem to grow more profuse and brighter, and where he may see and hear more to interest him, than elsewhere. I have known but two such places. One near our old home in Wisconsin, where in company with Prof. M. we often resorted after the office closed. There we passed many happy hours among the birds and flowers. But we made one sad mistake: we thought we needed a gun to study bird-life (?); so we destroyed the pretty songsters that we might save their skins; but we lost the best part—their sweet voices. We now see our mistake, for we have been converted to the ways of those true lovers of the animate, rather than the still, in bird life—Burroughs, Wood, and Abbott. Here in California is an excellent chance to study the birds. That brings us to our test—the birds of our glen—the one other spot above mentioned.

The glen—swale or ravine, as you wish—begins a few rods in front of the house and runs so close that the house may be said to be within it, then on down through the orchards, in some places badly washed by the miners in their search for gold. Here the birds are calling and singing all the day. Even while I write a black-headed grosbeak is whistling in a tree-top near. By the way, he is a stranger to our Eastern friends, as his range does not extend much beyond the Rockies. His colors are much the same as the towhee bunting, or swamp robin, but differ in arrangement. His song is a strange mixture of the oriole and the robin, more like the latter—so much so that he has misled me into thinking I was listening to redbreast's call.

The catbird is well represented, but I think he differs somewhat from the Eastern. I have not measured him, but judge him to be a trifle smaller, his coat less sleek, with more of a threadbare look. I perceive no difference in his song, but was very much surprised on looking into a nest to see, not the plain green eggs, but what resembled those of the red-wing starling. Coues, in his new Key, does not mention a difference peculiar to this coast, but the nest is better built and better lined than the home of his Eastern cousin.

A pair of Cassin's tyrant fly-catchers have taken possession of a prune tree close to the house, and though they give every one who passes within their domain a scolding, they are not as tyrannical as the Eastern kingbird, for two families of finches have their abode in the same tree. The crimson-fronted finch—or, as it is known here, the red-headed linnet—is a beautiful little singer and seems to take as kindly to the house as does that unwelcome little tramp, the English sparrow. Their nests abound in the porches, vines and rose-bushes. Some of them build so low that the owners come to grief through the neighbors' cats studying ornithology too closely, as two nests within a few feet of the window testify. While I was sitting here I heard a great outcry among the finches, and on investigating I found a snake in one of the nests with a young bird in its mouth partly swallowed. I disposed of him and found the rest of the young missing, but think they must have escaped to the ground—they were large enough to have done so. A nest that was close by in the ivy is robbed the second time by something, I haven't found what yet, but lay it to the snake. Poor birds! What with the cats, snakes, boys with pea-shooters and other naturalists, they have a hard time.

Of the house-finch's bright-colored cousin, the lazuli-painted finch with pretty azure head and rich brown breast, we have but too few. I wish there were more, though his song is poor. We have more good musicians than gayly-dressed people among our feathered friends.



PAIR OF TYRANT FLY-CATCHERS.

During the cherry season the cedar birds, or wax-wings, make themselves at home with us, though they receive a good many hints to the effect that their room is better than their company. They refuse however to leave until they see the cherry crop well gathered, then they disappear as suddenly as they came.

That miserable wretch, the butcher-bird, is here, too, though I confess I have not seen him killing anything larger than beetles. I have seen the northern shrike carry off a bird nearly as large as himself. The one here has been known to kill canaries in their cage. The whole family has a bad reputation, and I feel toward him very much as the average boy does toward snakes—they should be put out of the way on general principles.

Then we have our lovely plumed quail, the mourning-dove, the funny California woodpecker, cowbird, redwing blackbird,, two kinds of blue-jays, bluebirds, and many others, of which I may tell you some other time. Will not other readers describe some of the birds peculiar to their locality? What is more fascinating than the study of natural history?

## Lights Bright and Dim.

MRS. BUSYHAND.

In many parts of the country we must still depend on lamps for our evening lights, and fashion has decreed their use even in city houses where there is gas. A lamp that is not too high, and large enough at the base to set firmly, will be found to give the most satisfaction as a reading lamp, or to work by. Lamps on a high standard are desirable to light up some particular object, as a book of prints on a small table, or a portfolio of engravings. For illuminating a room, hanging or bracket lamps are best.

The care of the lights of a house should be the work of some one person, and should be attended to every morning. Only the best kerosene should be purchased. It is not only safer, but it burns better. Under no circumstances should a lamp be filled when lighted, nor should one be filled too full, as the oil will seep over the top, giving the lamp an untidy appearance, as well as filling the room with an odor not to be desired. If allowed to burn until there is very little oil left in the bowl of the lamp, it is dangerous to handle; this is thought to be one fruitful source of explosions. The burner should be kept perfectly clean and free from all accumulations of soot, cinders and insects. It is well to remove the wick at least once a month, and wash the burner thoroughly, polishing it with any silver polish that may be in use. If the wicks have been neglected for some time, put them in an old tin pan and cover with soft water, to which add a small piece of soda; place on the stove and boil a short time. The burner should always be perfectly dry before the wick is put back. A smooth, not too firm, wick should be chosen of just the size to fit the space intended for it in the burner. If too large it is apt to catch on the wheel and will not move evenly or easily. This gives an uneven flame, which smokes the chimney. If too small the flame will not be steady and clear, but will puff and flare. A pair of sharp scissors should be kept on purpose to trim lamp wicks. All the burnt portion should be cut off every morning, great care being taken to cut perfectly even, as the least roughness of the edge will cause the lamp to smoke. When a wick is too short to reach the oil, and it is necessary to use it, fasten a small strip of canton flannel on the end. The shades should be carefully wiped with a soft cloth, for the light under them will bring to view every spot and the least bit of that "bloom of the centuries," dust. The chimneys should be washed in warm water and polished with a cloth free of all lint. It is best not to use soap, as the resin in it is apt to leave a blue film on the glass. Soda should be used instead; it takes off all smoke and grime, leaving the glass beautifully clear. If a lamp has been left unused for a long time the oil should be

LAZULI FINCH.

emptied out, the wick removed and the burner cleaned as mentioned above. When closing a house for any length of time the oil and wicks should be removed from the lamps. When thoroughly taken care of in this manner lamps will not have any perceptible odor. When it is necessary to burn a dim light through the night, if possible use one of the small night lamps, but if a large lamp must be used, the flame can be made smaller by trimming the wick to a point in the middle.

The whirligig of time has again brought to the front, as fit to appear in any society, the candle of our forefathers. When candles have once been used in any house as a bedroom light or to carry from room to room, it is hard to persuade the users to return them to oblivion. The candlestick is often so quaint in form or so beautifully decorated, be it of silver, brass, glass or china, as to be a handsome ornament to any room, and the varieties of candles are almost endless. The latter can be bought for a few cents, or some dollars may be spent in their purchase. Wax candles can be had in all sizes, white, delicately tinted, or of the brightest blue. They come plain or ornamented in the most elaborate manner, and in many fancy shapes.

If the money spent in luxuries must be closely counted, any one who is skillful with the brush may buy a white wax candle and ornament it. The oil paints in tubes, such as artists use, work nicely. Sprays of delicate flowers, grasses and ferns look well. A broad band of color, or several bands in contrasting shades, may be painted by even the most unskillful. Arabesques, touched up in some parts with gold or bronze powder, have a particularly rich effect. It is best to select a thick candle rather than the long slim ones for ornamenting. If a wax candle cannot be easily obtained, a stearin candle can be used and the effect will be equally good. When a large number are wanted for a particular purpose, the common tallow candles can be painted with ordinary paint, such as is used to paint wood-work, made very thin. They will look pretty and burn well. Any one living in the country, who has among her household possessions a pair of candle molds, which perhaps belonged to the grandmother of the family, might like to see what she could do in the way of making candles. If she will follow this recipe she may be sure her candles will do to hold beside any made by her notable ancestors. Steep the cotton wick in water in which has been dissolved a considerable quantity of chlorate of potash. By this means a superior light is obtained and snuffing is rendered nearly superfluous. Heat one quart of water in which is dissolved three tablespoonfuls of pulverized alum and one of saltpeter. Add half a pound of beeswax and six pounds of tallow. Boil all together until all the water evaporates or it ceases to throw off steam. Skim well while boiling. Do not pour into the molds until it is cool enough to bear your hand in. If you desire, a blue tint can be given by adding indigo to the water; red, by adding cochineal.

## Helps for House-Cleaning Time.

RENA REYNOLDS.

There are usually a good many things lying around in closets and out-of-the-way places that are of no use except to swell to larger dimensions the bag of paper-rags. Nice iron-holders can be made of old stockings. Use pieces left from overalls for some "every-day" holders; it is convenient to have one hanging near the kitchen stove when lifting kettles, etc. There is plenty of time during the long evenings to look over the rolls of calico and worsted pieces that have accumulated; of the woolens, some chair-cushions can be made. It is pleasant when one gets a room cleaned to have ready some bright, new ornaments for it.

Have you ever, at house-cleaning time, coming to the bureau drawers, thought thus: "I'll let them go until some other time; they don't show,"—leaving the contents of those drawers in the same chaotic state? Let me tell you how to do the next time: Before you commence the regular cleaning, put the drawers and boxes all in order. If the chambers are cold, take your work to the kitchen or sitting-room; it is easy to remove a drawer from its place. Put your best gloves in one box, the worn ones in another; the same with collars, laces and ribbons. Each box should be labeled plainly, then you will know at a glance what the contents are. Following this method of "putting to rights," you will be surprised to see how easily the dreaded cleaning can be managed. Men's colored cotton shirts make excellent washcloths for cleaning wood-work. When considered too badly worn for other use, they should be laid aside for this purpose. Do not try to clean more than one room at a time, for it is very wearisome to have the whole house in disorder.

## Rugs in Variety.

MARGARET RYDER.

Fashion, sensible for once in her caprice, has declared in favor of rugs of all sizes, materials and styles. In elegant city homes are to be found rugs of domestic manufacture. Any housekeeper who has among her belongings a plentiful supply of bits of new or strong old woolen goods, possesses the materials from which to make with little cost, but more work, various rugs, that for durability and often beauty will rival any that she can purchase. Gather all these bits of woolen goods together; the new and bright and the old and faded will all work in together nicely. Cut them into strips of various lengths, about half an inch wide. When the goods are thin cut the strip wider. None of them should be over half a yard in length and some need be only a few inches. It will make a nicer looking rug if there are more dark colors than light. Sew these pieces together, hit or miss, the same as you would carpet rags. With a strong crochet needle crochet back and forth in single crochet stitch until your rug is as large as you wish. A little over half a yard wide and a yard and a quarter long is a good size. The ends may be finished by tying in a fringe made of coarse, black yarn.

Another method of making rugs which is preferable when the scraps are very small is as follows: Cut the rags into pieces about two inches long and half an inch wide. Mix the bright rags with some dark for the center. Put aside some one dark color for the border. Use very coarse, steel knitting needles, and with fine but strong cotton twine cast on twenty-five stitches. It is best to knit across one row plain. Commence the next row by knitting the first stitch plain. Into the next stitch knit one of the cut rags; keep both ends of the rag on the right side. Knit one rag into every other stitch to the end of the row; then knit back plain. The next row knit in more of the rags. Continue knitting in this way until the strip is thirty inches long. Three strips are knit in this way and sewn together. For the border set up thirty-three stitches and knit of the solid color. The border for the end and sides is knitted separately and sewn on.

Still another, and perhaps the most durable and quickly made of rag rugs, are the braided ones. For these the rags should be cut wider than for carpet rags and folded evenly. In braiding care must be taken to keep the work flat. The rugs may be made round or oval. In sewing the braid use strong linen thread and make an even round of each color. It may go around several times, but let each round be complete. If one has pieces of new, bright carpet, they may be used for centers. The carpet should be cut into the shape the rug is intended to be, and neatly bound. Then the braided rags should be sewed around it.

For rooms with a hard-wood floor, a handsome, large, square rug can be made of rags, woven exactly the same as for carpets. For the center use red rags of every shade and red chain. This can be woven in breadths and sewed together. For the border have a piece woven of dark blue rags and chain. It should be about half a yard wide; sew it around the center and you will have a durable and handsome "art square" for a dining or a sitting room. Brown rags and a golden-yellow chain is another pretty combination. These rugs are heavy and keep their place. When dusty they can be lifted, taken out of doors and cleaned. One need not wait for hard-wood floors before making one of these rugs. They will help a worn carpet do duty for a longer time, particularly if the carpet is taken apart, the best portions placed around the sides of the room, and the worn places in the center under the rug.

A rug to lay before the dressing-case or washstand in a bedroom can be made of a coffee-sack. These rugs can have a simple pattern worked in cross-stitch all around the edges or simply across the ends. The heaviest grade of Germantown yarn can be used for the embroidery. A figure worked in the center is an addition. These rugs should be hemmed and have a fringe across the ends. They will wear better if lined with old carpet.

Rugs made of sheepskin are very warm and give an air of comfort to any room. We have been told by an expert that if prepared as follows they will be soft and perfectly cured: Pick out all bits of dirt and matted places and wash in warm soapsuds; it will require washing through several waters to clean the wool. Rinse thoroughly in hard water to remove the soap. In a tub dissolve half a pound of alum and a pound of salt in ten quarts of boiling water; then add enough water to fill the tub. Soak the skins in this seven hours; then hang on a line to dry, wool side out. As soon as the wool is dry, tack the skins on some flat surface, wool side down; the side of the barn or woodhouse will do. When the skin is half dry, rub it thoroughly with a mixture of equal parts of powdered saltpeter and alum. Do this for three successive days. Then take down and fold the skin side together and lay away for three days. Then lay on a table or floor and scrape off all lumpy places with a blunt knife and rub well with pumice-stone or sand-paper. The skin will then be perfectly cured, soft and pliable.

## The Bright Side of Soap.

PALMETTA GOLDSMITH.

Soap has its attractive side, which is always its clean side. A dirty piece of soap or a dirty soap-dish is repulsive, and one naturally shrinks from ablutions which are to be performed with such aids. A certain habit of observation (which is one of my failings) has convinced me that the soap question, unlike "Is marriage a failure?," is one which has not forced itself to any extent upon the minds of the people. It may seem like carrying estheticism a little too far, to wish to reform the soap-dish at the kitchen-sink, but this is just where it is most important to begin. Have two tin or granite hanging soap-dishes, with holes in the bottom to let off the water, so that your soap is not always of the consistency of a jellyfish. In one of these keep laundry soap for scrubbing, and like purposes; in the other a piece of Castile soap. The men who work in the fields come home with hands roughened, and often wounded, by their toil, and it is simple cruelty to force them to wash with common yellow soap, which adds to their discomfort. Induce each member to always rinse off the soap before laying it down. For dishwashing, there comes a little tin box with holes in it and a long handle. It is much neater and more economical to keep a bit of soap in this, and shake it about in the dishwater, than to use a large piece, which the servant will let lie in the water while washing her dishes, with the general result of flavoring your soup or meat with yellow soap, a bit of which has been carelessly left on the spoon or the tine of a fork. Receptacles for soap in sleeping-apartments should be cleansed as regularly as the beds are made. It is better to attend to this oneself than to leave it to a servant, who is often hurried, if not forgetful. The writer overcame the aversion to soap-and-water in her little boy, which most children seem to share with kittens, by giving him a pretty piece of pink toilet-soap, molded in the form of a shoe, and promising him one in the shape of a little girl's head and face, when he had used the former, if in the meantime I never saw him at table with soiled hands.

## Dining with Duke Humphrey.

How many of you boys and girls know the meaning of the phrase to "dine with Duke Humphrey," and not only its meaning but its origin, for we take it for granted you have all heard the expression. Well, we hope you will never have to dine with that nobleman, for it simply means not to dine at all. It was supposed, although mistakenly, that the bones of the Duke of Gloucester, youngest son of Henry IV, famous for his hospitality and known as the good Duke Humphrey, lay buried in the old cathedral of St. Paul. Now, in the fifteenth and sixteenth centuries, this was the regular meeting-place for the business or pleasure of the citizens. Here traders bargained and sold; gay gallants strutted up and down to exhibit their fine clothes; servants were hired and advertisements exhibited. When the dinner hour came the throng speedily melted away, until only those too poor to pay for the price of a meal remained, and these were said to "dine with Duke Humphrey."

## A Day of Freedom.

NORSDENGOLD.

"So you are not going with us to-morrow?"

"No; I don't see any fun in it."

"Why, Harry," exclaimed his sister, "what is the matter with you? Just think of the sights we are to see, and of the beautiful sail up the Hudson."

"Oh, there will be nothing but dust and noise on the cars; and then, the boats are always so crowded that a fellow can't enjoy himself. There is no use in talking to me. I have made up my mind not to go."

Ella thought a moment, and then made one more effort. "You do care for soldiers, Harry," she said, "and papa tells me we shall see the cadets at West Point."

"See the cadets at West Point!" repeated her brother, scornfully. "What do I care for a regiment of stuck-up boys in uniform, marching around as if they were in prison!"

Now the truth was that Harry did care a great deal for soldiers, and, in fact, would have liked to go on the trip to West Point which was to be made on the morrow; but he had reached that age when a boy begins to think himself independent, and so he refused to become one of the party. Not that he was naturally a bad or ungrateful boy; but of late he had formed the acquaintance of a number of lads whose advice was to show yourself a man by not following the counsels of those who know better. This, together with his own ideas of freedom, had made a sad change in him, which greatly worried his father and mother. He was no longer the pleasant companion he had formerly been, and Ella, who was a sweet-tempered girl and playful in disposition, often longed for the old days when they enjoyed such good times together. But the young man had discovered that playing with girls was not dignified enough for him; he gradually ceased taking part in her sports, and more and more sought amusement elsewhere.

"Harry is growing very sullen of late," said Mr. Peters, in conversation with his wife that evening. "I fear he has fallen into bad company. Do you think any of the boys at school have led him astray?"

"Well, I notice that since vacation began he has been with the Mallory boys a good deal."

"With the Mallory boys!" exclaimed Mr. Peters. "I cannot permit him to have such companions. They are among the worst youths in the village, and there is no telling how far and into what mischief he may be led by them. I begin to understand why he is so changed, and must speak to him on the subject."

But Mr. Peters was very busy that evening, and his resolve was forgotten. Early the next morning the excursionists set out on their journey, bidding Harry a regretful good-by.

He assumed as indifferent a look as he could, but after they had disappeared he said to himself, "I half wish I had gone with them. It may not be as bad as I thought. I should like to see West Point; but then, how much better it is to go traveling by yourself, and have nobody to worry you by keeping their eyes on you all the time. I am old enough to go around with other companions than my sister."

Thus he consoled himself, and spent the morning in reading a few books which his friends had loaned him. Exciting tales they were, and he became so deeply interested that the hours flew swiftly by, and it was noon before he was aware of the fact. After dinner he sauntered into the village, and turned down a street leading to the river. Suddenly a peculiar whistle, issuing apparently from a clump of bushes in a small yard, attracted his attention. He stopped and gazed in that direction. Soon a familiar head appeared, then another, and Tom Mallory, with his brother Frank, greeted him with a boisterous,

"Hello, Peters!"

"Hello yourself!" replied Harry. "What are you doing in there?"

"Getting ready for a row," exclaimed Frank, exhibiting a pair of oars; "would you like to come along?"

Harry hesitated. He had never ventured on the water without permission; and, indeed, his father had forbidden his doing so. But his supposed manly spirit made him desirous of joining the expedition.

"Yes," he answered presently, "I'll go."

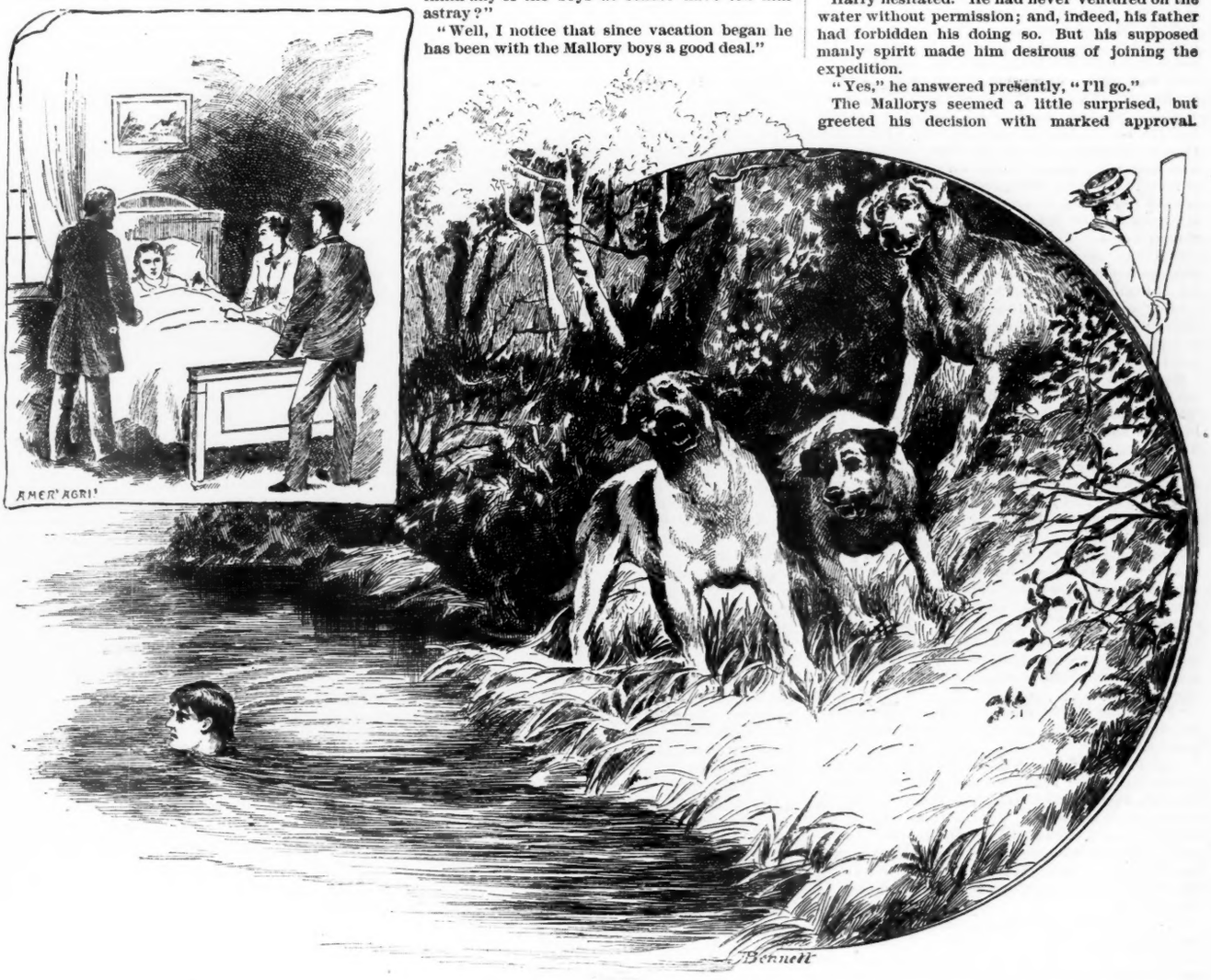
The Mallorys seemed a little surprised, but greeted his decision with marked approval.

"Good! I see you think for yourself," said Tom.

This flattered Harry, and soon the three were on their way to the river.

There was a boat at the landing, and the Mallorys jumped in, closely followed by their companion. Tom took the oars, and with a few vigorous strokes sent the craft into the middle of the stream. For about half a mile Harry keenly enjoyed the row. The bracing air and beautiful scenery were full of delight; and he thought West Point and the Hudson could not be as enjoyable. He half pitied his sister, and began to congratulate himself on his decision. The boys were full of jokes, and he laughed at all of them.

At length Tom dropped a word which sounded like an oath. Harry looked astonished, and Frank, seeing the effect, muttered something about being afraid to talk like men. Now if there was any-




HARRY JUMPED INTO THE STREAM, BUT THE DOGS WERE AFRAID TO FOLLOW.

thing Harry disliked, it was swearing, and he boldly said so. This almost brought on a quarrel, but Tom bade his brother "be quiet," and they glided on in silence.

"Do you know how to row?" asked Tom suddenly, pausing to wipe away the perspiration.

"A little," replied Harry in a modest tone, not liking to boast.

"Well, try your skill."

He took the oars, but the first pull sent him sprawling back into the boat, while his comrades shouted with laughter.

"Caught a crab, didn't ye?" chuckled Frank.

Harry was vexed. He knew how to row perfectly well, and indeed had often, in company with his sister and mother, taken long boat-rides up the river. His father was accustomed to say that he would soon become a skillful oarsman if he kept on improving. On one occasion he and his father were engaged in an amateur race with another party, and came off victorious. So it was no wonder that he felt chagrined at the strange mishap. If he had been watchful, however, he would have understood the occurrence, for Frank, just as he prepared to pull, had slyly lifted the oar from the rowlock, which, not being made for beauty, was a very low affair, and scarcely afforded a secure holding for the oar. This event made him more anxious than ever to show his skill, and soon he had the boat flying through the water far faster than it had done under the guidance of Tom. He took long, clean strokes, and even ventured to trail or feather his oars. This proceeding brought looks of envy to the face of the previous oarsman, whose attempts in that direction were of a laughably clumsy nature.

This was excellent sport for a while and Harry enjoyed it, but soon his arms began to ache, and he asked Frank if he did not wish to take the oars.

"No," replied that individual, who looked rather cross; "you do so well you may keep them. I am enjoying myself, and I could not think of making you lose any pleasure by taking your place."

Harry felt annoyed, but said nothing. "Where are you going?" he asked, after he had rowed for half a mile further in silence, although the two brothers had kept up a low conversation all the way.

"We are going to see our uncle," said Tom, with a sly wink at Frank, which Harry did not observe; "he has a fine melon patch, which he allows us to visit whenever we wish, and we are going there this afternoon."

They were now gliding through a smooth piece of water, where the stream was quite narrow and shaded by the branches of huge trees which lined the banks. There was no noise except the sound of the boat and of a crow, whose dismal cawing could be heard in the distance. The water was almost motionless, and the stillness, like that of an unexplored forest, made Harry feel rather uncomfortable.

"This is the place," whispered Tom. "Steer for the shore, and run into that little opening over yonder."

They landed and peered cautiously between the shrubbery. Then Frank led the way, and pushing through, they found themselves on the borders of a huge patch of melons. The delicious fruit lay on every side, and seemed the very perfection of ripeness. Harry's mouth watered, but feeling rather doubtful as to their right to the fruit, he asked Tom whether the owner would allow them to take his property.

"Yes," growled Tom, pausing in the act of opening a huge cantelope; "didn't we tell you he was our uncle? You may eat or not, as you please; but we came here to enjoy ourselves."

Harry, thus reassured, ate a few slices, but still felt a growing suspicion that something was wrong and was glad when the two youths seemed ready to start for the boat. He took a few steps towards the stream, but was called back by Tom.

"Will you take a note for us up to our uncle's house, just beyond that corn-field over there?" asked he.

"Why not go yourselves?"

"O, we're tired, and as long as we brought you along, you might be obliging enough to save us the trouble. Go ahead, and we will stay here till you come back."

This whole story was utterly untrue and only invented to deceive Harry. The Mallory boys were in no way related to the owner of the lands on which they were trespassing. He was a man noted for his severity, and had even threatened to shoot any person found on his grounds. So it was an act of great daring for any one to invade his domains, but the Mallorys had made up their minds to accomplish the task, in order to obtain some of his famous melons. They also had never really cared much for Harry, and his conduct on the river made them still more dislike him. In their whispered consultation they had agreed to play a trick on him, sending him with a supposed message to the farmer. When he was out of sight they would hurry to the boat and leave him to his fate.

"I see no use in it," persisted Harry, "and I would rather not go."

"You don't want to go, but you will have to. Take this note, I say, up to the farm-house," said Tom, giving Harry a small bit of folded paper.

But still he lingered.

"See here," exclaimed Frank, impatiently, "if you don't start at once we'll go off in the boat and leave you to walk home alone."

There was no alternative. The Mallory boys were large and strong, and bad enough to carry out their threat. So Harry reluctantly set out in the direction shown him.

The melon patch did not extend very far, and soon gave way to an open, unplowed field, which, in its turn, was succeeded by a field of corn. Through this Harry cautiously made his way, brushing aside the long leaves that persisted in obstructing his path.

He had almost reached the limit of the field when the sound of voices caused him to stop. One was a deep bass, and seemed to come from an extremely excited person.

"No," it said, "I will not stand it! Something must be done to stop this trespassing. You must attend to your business better."

"Yes, but how can I help it?" remonstrated the other voice, which came apparently from a younger man.

They were evidently engaged in a dispute. Harry opened the piece of paper which he held in his hand, and the truth burst upon him. It was blank. He had been duped and was a trespasser, in danger of being discovered.

"Hush! I thought I heard something in the corn-field now," exclaimed one of the speakers.

"So did I. Give me the gun," said the other.

Harry stopped and stood quaking with terror. He feared to call out, but in a moment something crashed by his head. Then he shouted in terror, and started to run.

"Why, it's a thief," cried the bass voice. "I'll set the dogs on him."

Harry was already running with all his might as a shrill whistle sounded on the air. He bent low and dodged the corn-stalks as well as he could, but his progress was necessarily much retarded. Twice he fell, but, scrambling to his feet, redoubled his speed as a deep baying told him the dogs were already in pursuit.

Although much frightened, he remembered that the stream a short distance above the melon patch made an abrupt turn and flowed quite near the corn-field. Towards this spot, therefore, he ran. Now the dogs were nearing. He could hear their bodies crash through the obstructing underbrush. Faster and faster he went, breaking the stalks, and sometimes almost blinded by the long streamers that struck him in the face. Crunch, crunch, came the sounds behind him. He thought of the pleasant time his parents and Ella were having. How foolish he had been not to join them! What if the dogs should seize him, and he should be arrested on the charge of stealing! It would almost break his mother's heart.

These thoughts gave him fresh speed, and in a moment he had emerged from the field. The stream was only a short distance away. If he reached it the dogs were powerless. At a more rapid pace than he had ever before known he sped over the level earth. The exulting barks told him his pursuers were in plain sight of him. He half turned his head and saw that the dogs were enormous creatures, and would soon be upon him. Their tongues hung out and the foam flew from their jaws, giving them a most horrible appearance. How their eyes shone, and how their white teeth glistened when they barked! They were at full speed and kept well together, making all the time a curious yelping.

Harry clenched his fists, and although almost exhausted, reached the borders of the stream. The foremost dog leaped forward, but his expected victim was already away from the bank, and almost in the middle of the river.

The beasts were afraid to follow, and standing on the bank uttered howl upon howl as Harry rose to the surface and struck out for the opposite shore. He soon reached it, and clambered up, dripping with water and mud. But he dared not wait, and at once started at a full run down the stream. When he thought he was sufficiently far away from the scene of his disaster, he stopped for breath and lay down in the sun utterly exhausted. He was afraid to be seen in the village, and so resolved to wander around until it was dark. Luckily the afternoon was already far spent, and soon the sun went down and he made his way home. He at once went to his room and got into bed.

The next morning he awoke to find his parents and a doctor bending over him.

"A cold, with a slight fever," was the verdict, and he was in bed for several days. Sorrowfully he made a full confession and asked his father's forgiveness.

Ella was constant in her attendance, and told him of the delightful time she had had. As he listened to her description of the Hudson and West Point, and thought of the kindness of his father and mother, tears came to his eyes and he said, "How miserable, compared to the quiet love of parents and the affection of a sister, are the adventures and excitement of a day of freedom!"

## Short and Long Alphabets.

A. C. SAGE.

The number of letters in the alphabet varies largely in different tongues, as you will see by glancing through the following list.

The wild little boys and girls of the Sandwich Islands have only twelve characters to bother their baby brains over, while the Burmese come next with just nineteen. The Italians follow very close with twenty; the Bengalese with twenty-one, and the Hebrew, Syriac, Chaldee, Samaritan and Latin nations twenty-two. The Greek alphabet contains twenty-four letters, the French twenty-five, and the German and Dutch, like our own, twenty-six. The Spanish and Slavonic each boast of twenty-seven, Arabic twenty-eight, Persian and Coptic thirty-two, Georgian thirty-five, Armenian thirty-eight, Russian forty-one, Muscovite forty-three, Japanese fifty, Sanscrit one hundred, Ethiopic and Tartarian two hundred and two, while the Chinese display the astounding number of two hundred and fourteen elementary signs or keys, from which they form combinations, that being the actual count of alphabetical characters up to eighty thousand. Just think how those poor little pig-tailed heads must ache before the "primer" is finished!

The Cherokee Indians also have an alphabet of their own, consisting of eighty-six letters, and the invention of this is considered one of the most remarkable events in the history of our aborigines. It was in the early part of the present century that the curiosity of certain sachems of that tribe was aroused by seeing a white man read a paper important to their welfare. He deceived them, and in solemn conclave they held a discussion as to whether the mysterious power of "the talking leaf" was a gift of the Great Spirit to the "pale-face," or was a discovery the white man had made for himself. To the latter belief evidently inclined See-Quah-Yah, a half-breed, who has since been called the "American Cadmus," for he it was who, being confined to his wigwam by lameness, set his wits to work, and, after months of labor—during which he was assisted by his daughter—produced the eighty-six rude characters which represent the guttural utterances of the Cherokees. To a class of chosen young "braves" he imparted his wonderful invention, while all his countrymen—proud of his talent—held him in highest reverence, as one favored by the Great Spirit. The United States Government also encouraged him by having a font of type cast for his alphabet, and a newspaper was established at New Echola, printed partly in Cherokee and partly in English. To his white friends this benefactor of his race was known as "George Guess."

The manner of teaching dull children the mystic little characters which seem so insignificant and yet mean so much has often been very curious. Thus, we read that Herodes devised an original plan to overcome the stupidity of his son Atticus. He selected twenty-four little slaves of the boy's own age to be educated with him, and upon them bestowed the names of the Greek letters. Young Atticus was then compelled to learn the alphabet—by rote, at least—as he romped with his companions, now calling for *Alpha*, now wrestling with *Psi*, and now running a race with swift-footed *Omega*. One of the earlier French princes, noted for

his indolence, also acquired his first smattering of knowledge in much the same manner; having twenty-five servants to attend upon him, each of whom had a letter painted upon the front of his attire, and who answered only to the name of his respective character.

In the Russian alphabet there is no H, and the lack of this letter once gave rise to an amusing mistake. Rohl, the traveler, was visiting the great church of St. Alexander Nevskoi at St. Petersburg (which was named for the canonized Grand Duke Alexander, whose remains are there interred in a silver coffin), when his guide astonished him by pointing to a corner and saying: "There lies a cannibal." On nearer inspection, however, it was found that the tomb was that of the illustrious General Hannibal, but, as the Russians have no H, they had changed the letter into K, and hence the remarkable, and not very flattering, misnomer.

## The American Antelope.

ERNEST E. THOMPSON.

Our illustration represents the head of that strange and beautiful animal, the American antelope (*Antilicapra Americana*). It is one of those ornaments of the plains that are, alas! only too surely doomed to extinction by the ruthless encroachments of civilization. Twenty years ago it was no uncommon thing to see the antelopes in bands of tens of thousands; now they are seen singly, or, at most, in bunches of a dozen or so. Once they were found throughout the length and breadth of the prairie region; now they are found only in the less-frequented regions of the ranchman. However, the antelope is holding its own far better than the buffalo and the elk, for it seems to fraternize with the cattle of the ranchers in a surprising manner—no doubt much as it did with the buffalo when the great herds of that animal roamed the plains. This animal is of especial interest to the anatomist, uniting in itself, as it does, characteristics of many totally different animals. Its horns are like those of an ox, in being corneous and hollow, and like those of a deer, in being branched and deciduous; it has the hair of a deer, the glands of a goat, the hoofs of a giraffe, and many anatomical resemblances to the true antelopes. Its eye is exceedingly brilliant and expressive. Judge Caton gives a touching account of the behavior of a caged antelope that he had. It was terrified when he approached it, and, after a fruitless attempt to escape, it sank on its knees before him, its soft eyes filled to overflowing with copious tears, and its whole expression so pleading and piteous that he set it at liberty with the utmost expedition. All naturalists who have observed this animal in its native state testify that it is the fleetest quadruped that roams the plains. Its speed is marvelous, probably surpassing that of any other quadruped for the first mile or two. Its leaping powers are equally great when it meets with a river or a ravine in the course of its flight. The stories that are told of the ease with which it overleaps such obstacles sound so fabulous that I dare not repeat them here. And yet, with all this power, the antelope is readily confused by a fence but three feet high. It seems to have no idea of leaping upward. In fact, its life has, for so many generations, been, exclusively on the open level plains, where streams and gulleys were the only obstacles, that it has totally lost the power of overleaping any other kind of hindrance in its path. In captivity this animal is described as gentle and affectionate, always making itself a great favorite whenever it is kept as a pet.

Its flesh is said to be excellent and well-flavored if care be taken to prevent the hairs from getting on it after it is skinned, for the musk glands with which it is so well supplied are very apt to impart an unpleasantly strong odor and taste to the meat unless the hide, hair, and all that has contact with the exterior of the animal be speedily and completely removed.

THE SWIFT-FOOT OF THE PLAINS.

## A Chance for the Boys to Vote.

Boys, we want to interview you. Your opinions are a good deal more valuable to us just now than those of President Harrison, or Secretary Blaine, or Hon. William E. Gladstone. The Harrisons and Blaines and Gladstones of the future are coming from your ranks, you see, and that is just the point. The AMERICAN AGRICULTURIST wants every farmer's son, fourteen to twenty years old, to send to this office a postal card answering questions, which will be found below, concerning the occupation he expects to follow, and the reasons for his choice. The thriftiest and best farmers in the country are to be found on the subscription list of the AMERICAN AGRICULTURIST, and from their sons are to be recruited the leading men of the near future. No wonder, then, that we expect to make interesting and important discoveries by applying the journalistic interviewing pump to the sunburned boys on the farm and in the district school-house.

Here is material which is in demand everywhere. Strong bodies, clear heads and sound morals are a combination which makes not only successful farmers—who are men of means and influence—but the class of men which take the lead in all occupations. Several years ago Rev. Dr. Washington Gladden made a canvass of so-called successful men—college presidents, merchant princes, authors and others—and he found that the boys reared in the country (mainly the sons of farmers) were in the lead. These sturdiest of all youngsters have a way of scattering into all walks of life, and doing well wherever they happen to settle. The almost uniform success which follows a course at the Massachusetts or the Michigan agricultural college, whose students come from farm homes, is a clincher of an argument, not only for the work of the colleges, but for the energy of the young men and their bringing up.

The country needs more first-class farmers, educated and shrewd, and it is going to have them. The Legislatures of several States are full of such. A fine sample may be found in Washington, in "Uncle Jerry" Rusk, the present secretary of agriculture, who is admired and respected from Maine to California, and nowhere more than in his own State of Wisconsin. The field which is open to the farmers' boys in their fathers' calling is so wide and promising that the only glimpse they can get of it is in such examples as these grand men. We hope by our interview to find that the AMERICAN AGRICULTURIST's boys, a generous share of them, are already beginning to fit themselves for progressive, business farmers, not forgetting the education—all they can get. Of course, if there is here and there a bright lad who will never be in his element, or never fulfill his destiny, until he gets head over ears into trade, or literature, or politics, he is entirely pardonable, for the community looks to the farm to find the best in all departments.

Now for the questions:

1. What occupation do you intend to follow?
2. Your reasons, in a few words.
3. What course of study or preparation are you taking, and do you intend to take, to fit yourself for your life-work?
4. Do your parents approve of your choice? If not, why not?
5. Your present age, in years.

Only the sons of farmers are expected to vote; none less than fourteen or more than twenty years old. Each voter must write his name and address at the head of the card (a letter if a card is too small) and address it to the AMERICAN AGRICULTURIST, New York.

## Quiz.

The way in which words come into daily use is sometimes very curious, and none perhaps more so than the general adoption of the word "Quiz," which originated in a joke. It was one Saturday evening, in the city of Dublin, Ireland, that a gay company was assembled together, consisting largely of some of the famous wits and men of fashion of the day. Among them was Richard Daly, then the manager of the Irish Theatre, and, in a fit of bravado, he wagered a large sum that, by a certain hour the next day, he would have spoken all throughout the city a word having no meaning and being drawn from no known language. Laughingly the bet was accepted and the stakes deposited. Accordingly, Daly hastened to the theatre and dispatched his servants and supernumeraries in all directions, with instructions to chalk the word "Quiz" on every door and shop-window in town. Sunday morning dawned, and, the stores being closed, the good people of Dublin, on their way to and from church, were astonished enough to see this odd sign confronting them on all sides. It caused much surprise, and "Quiz" was in everybody's mouth, thus winning his wager for Richard Daly, while ever since, when one attempts to pass off an improbable story, he is apt to be met with the expression, "Oh, you are quizzing me!" "Quiz" has also found its way into the dictionary as a legitimate word, its meaning being given as "to puzzle; to hoax," "to look mockingly at," and "to ridicule or make sport of." It is also defined in three ways as a noun, one definition given being "a riddle or obscure question, an enigma;" a second, "One who quizzes others;" the third "An odd fellow." Quizzer, quizzical, and quizzing-glass are all outgrowths of the word "quiz."

## A Live Plaything.

As our young friends are all aware, it is much more interesting to play with a "real, live" plaything than with one where we have to "make believe too hard." So kittens and dogs, squirrels, mice, rabbits and even Guinea-pigs have found many admirers among the children, but we know of only one insect that has been thus favored. This insect is called the *Poe mesa*—or lay-the-cloth—by the little Brazilians, who like to see it raise itself up whenever a sudden noise is made and hold out its fore-arms like a waiter about to spread a table-cloth.

## Authors' Names.

Answers to last month's puzzles:

13. Roe.
14. Robertson.
15. Beecher.
16. Fawcett.
17. Stowe.
18. Coleridge.
19. Cable.
20. Lowell.

# FROM NEAR AND FAR.

## The Northern Pacific Fruit Region.

Last winter I visited Oregon and Washington, mainly with a view of ascertaining their character as a fruit region. I remained there from November to April, and from all I could observe formed the opinion that in some important respects they have the banner fruit region of the United States. The climatic conditions there are superior for fruit production to those of any other portion of the country I have visited.

The valley of the Columbia is a very peculiar tract, being an ancient lake bed filled up with the output of volcanoes. These volcanic soils produce the finest wheat I have ever seen, and to all appearances are going to rival the banks of the Rhine as a wine country. It is so little above the level of the ocean that the *Vitis vinifera* succeeds admirably, while west of the Cascade Range our native grapes succeed the best. It is expected that the Washington Horticultural Society, at its next meeting, will invite the American Pomological Society to hold its next biennial meeting there. The society is now taking measures to erect a large building at Tacoma to be filled with a permanent exhibit of fruits. There is much animation and energy displayed there in fruit production.

D. S. MARVIN.

## How the French Make Veal.

The French people know how to feed calves for veal, to cook veal, and when and how to eat it. If our veal were as good, tender, juicy and luscious, we should appreciate it better and consume more of it. By proper feeding, the French produce superlative veal, all along from six to twelve weeks. At the first-named period they bring calves up to two hundred pounds and over; and at three months make them weigh over four hundred pounds. The average weight under the best management of the veal-producing districts of Champagne and Brie will reach three hundred and thirty pounds, and bring from $45 to $75. It would indeed be difficult to find similar rapid increase of weight in so short a time in any other country. In fact, the French realize as much money from calves at three months as we do at two years; and probably vastly more if we fed up to that age.

This is their method of feeding: They feed nothing but milk, commencing with six quarts a day for a few days. The calves are muzzled to prevent the possibility of eating anything else but the milk. The calves are kept in warm, darkened stables. The milk is gradually increased to what the calves will take with avidity. After six or eight weeks, to make the meat white and inviting, from two to six eggs are given in the milk.

The color of the meat may be ascertained during the life of the calf by looking at the color of the blood vessels of the mucous membrane of the eyes. If of a delicate light pink, the veal will be clear and white; but if of a dark red color, the meat will be of a reddish-yellow color. The meat of calves slaughtered too young will be dark red, and feel slimy when handled. The meat of strangled calves is of a bluish-red color.

A. S. ERICUS, Paris, France.

## Agriculture and Mining in Arizona.

I have been very much interested in the letters written for the AMERICAN AGRICULTURIST by subscribers in different parts of the world, and it may be that other readers would like to hear about Arizona. We can raise anything where we can get water. The Salt River Valley produces all kinds of grain, oranges, lemons, all small fruits, peaches, apricots, nectarines, apples, etc. The mountains are covered with cattle, and one can have any climate he wants. It is a great place for invalids. My wife came here into the mountains six years ago, from Iowa, with hemorrhage of the lungs. She has had no trouble from it since. Many come here with asthma, who cannot live in the Northern States, and never have an attack. We need more railroads, in order to make a market for our produce, and are waiting for Uncle Sam to put up those dams, so we can irrigate more land. Thousands of acres will make beautiful homes if more water can be stored in the mountains. In the mining districts of old Yavapai county, during the months of December, January, February and March, the snow falls to the depth of five feet, and when this snow melts it goes down with a rush. If it can be stored it will make the plains blossom like the rose. Our mines lie idle because silver is so low and transportation is difficult. We need more smelteries and to have silver remonetized. Then railroads will be built, and the mines worked, making a home market for our beef, fruit and grain. Think of beef at one and a half cents a pound on foot; barley at fifty-five cents a hundred pounds; hay three dollars per ton; while all that the farmer has to buy is very high. We look for great changes when Congress meets again, and hope we shall not be disappointed.

S. G. TURNER, Yavapai Co., A. T.

## A New Field for Dairying.

Since making my annual report to the United States Department of State, I have ascertained that an experiment at dairy farming on the island of Panay, of the Philippine group, has been very successful, as have others in different parts of China. It has been tried in a small way here, also, by inexperienced persons, who have been only partially successful, owing, I am told, to a lack of energy, and ignorance of the proper methods of procedure. In these experiments Australian cows were used, and there are still quite a number of them here, although many have been converted into beef, as this obviates the trouble and expense of feeding and caring for them.

As a rule, men with capital prefer to invest it in something that presents no risk—such as the exportation of hemp, sugar, and other products of the islands—rather than to put it into a local enterprise that no one has ever tried before. An energetic American dairy farmer could make a great deal of money here with two or three milk-routes. There is nothing of the kind here now, families being supplied with buffalo milk, peddled about by native boys. The cost of transporting a small dairy herd from New York to Manila could best be learned at New York. Probably the cheapest way would be to send cows on one of the sailing vessels that run with comparative regularity between Boston or New York and Manila, as there are no regular steam lines except between Manila and Hong Kong, where a connection is made with the steamers from San Francisco.

A. R. WEBB, Consul, Manila, P. I.

## Agriculture in Alaska.

Very little has been accomplished or indeed attempted in the way of agricultural development. With the exception of a number of gardens here and there, and a few ranches where root crops are grown, there is nothing worth mentioning in the way of agricultural or horticultural development. This, too, notwithstanding there is a very considerable acreage of tillable lands in southeastern Alaska possessed of a soil which produces a most luxurious vegetation—the fact being that no one comes to Alaska with the belief that either its soil or climate is in the least degree adapted to agricultural or horticultural pursuits, but invariably with a view to engaging in other business. Consequently we have no experienced farmers or gardeners, and hence it cannot be said that anything like a fair test of the adaptability of the soil and climate to the growth of farm and garden products has ever been made. Nevertheless, the comparatively few experiments which have come under my observation leave no room to doubt that all the cereals, except corn, can be grown to perfection in many parts of Alaska with perhaps no more frequent failures on account of low temperature and excessive rain-fall than are apt to be occasioned by excessive heat and protracted drought in the Eastern, Middle and Western States.

Intelligent and observant miners, who have returned from the upper Yukon country, speak in glowing terms of the summer climate, and aver that there are in that section large bodies of arable lands, with a soil in which farm and garden products of nearly every kind can be grown and matured, there being more continuous sunshine and much less rain-fall than prevails below the coast range of mountains. One of the most intelligent of these miners informs me that there were 85 days of growing weather in that region last summer, which would be equal to at least 120 days in the latitude of Ohio and Indiana, having reference to the amount of daylight, that being practically the "land of the midnight sun." He tells me of extensive river valleys, in which the wild grasses grow luxuriantly, ripen and cast their seeds, and in which various small fruits are indigenous to the soil and climate. The excessive winter's cold is counterbalanced by the summer's correspondingly high temperature, the frost which remains in the ground below the surface, together with occasional warm showers, supplying the moisture necessary to a rapid and healthy vegetation. It is not to be expected, however, that the Yukon region will ever acquire any importance by reason of its agricultural advantages; nevertheless, enough is now known of its soil and climate to justify the assertion that the people who go there for the purpose of developing its other resources can grow their own vegetables, and be under no necessity of importing beef, butter, etc., if but a small proportion of their whole number will give their attention to farming.

From all I can learn—and I have conversed with many persons who have visited and spent considerable time in those sections—I am inclined to believe that the climate of the Aleutian Islands and that part of the mainland below the coast range of mountains extending north and west from Sitka to the Alaska peninsula, including the large island of Kodiak, are better for agriculture and horticulture than in any other portion of the Territory. There can be no question as to the fertility of the soil, which is principally a vegetable mold with a clay substratum. Nearly all the products of the garden are grown to perfection at the settlements throughout this last-mentioned section, though it is safe to aver that there is not an experienced or competent farmer or gardener in the whole Territory.

Altogether, I can see no good reason for changing or modifying the opinion heretofore advanced in my official reports, that, while Alaska cannot properly be considered, either presently or prospectively, an agricultural country in the popular acceptation of the term, she is, nevertheless, possessed of capabilities in that direction sufficient to the support of a large population.

A. R. SWINEFORD, Sitka, Alaska.

## New Departures in the Old Dominion.

We have many large farms here which used to employ twenty or thirty hands that are now growing up to bushes and weeds, and can be bought at from three to ten dollars per acre, according to condition and nearness to the railroad. Before the war many of the same lands were worth twenty to thirty dollars an acre. Southern Virginia has never had any great influx of emigrants from the North or Europe, although I fail to see the reason why. The winters are short and mild, and the land is well watered and fertile, with a rolling, but not mountainous, surface. The staple crops are tobacco, wheat, corn and oats. Clover, timothy and orchard grass also grow to perfection. Apples, peaches, cherries, pears, and all kinds of garden vegetables grow in abundance. But if our general government does not some day remove the tax from tobacco, we shall have to stop raising it, as the price of the common grades is far below the cost of production. This section is also adapted to stock-raising, as the feeding season is only three or four months long, and I do not see any reason why grapes would not do well and wine-making become a prominent industry. The only laborers are negroes, who require very little. What this country needs is men of energy, who possess capital to work with. This county is eighty miles southwest of Richmond, and about sixty miles east of Danville. The only railroad we have now is the Richmond and Danville line, but another is being built. Any one who feels a desire to move over here will meet with a kind and hospitable reception. We are willing to let bygones be bygones, and smoke the pipe of peace.

C. H. FARRAR, Charlotte Co., Va.

## Raising of Alfalfa in Texas.

The soil best suited for raising this valuable forage plant is a deep sandy or waxy loam. It grows best in this State on the low lands, and its yield is fine. There are other soils here well adapted to it, which are now planted to cotton, and are not producing as profitable crops as they would in this plant. If this country is to prosper, it must abandon the one-crop system for mixed farming. Forage crops, which would do well here, should be planted, and by a little labor the farmers could have plenty of fine fat cattle and horses, and the best of milk and butter. To prepare the ground for alfalfa, plow it deep and harrow it thoroughly with a smoothing harrow. This should be done from the 1st to the 20th of October, so it would give the alfalfa time to take root before winter. If sowed broadcast, it will take from twelve to twenty pounds to the acre, or twelve pounds to

the acre sowed in drills. The broadcast method succeeds well in this State when there is a good season for it to take root. The seed should be covered to the depth of three inches, to insure a good stand. It may be cut at least three times in a good season—once each in June, August and October. If the season is unfavorable, it can be cut only in June and August. If housed as soon as cut, it makes a splendid feed for winter. The time is now at hand when the farmer in Texas should try to raise forage crops of all kinds, and not depend on the wild grasses for his stock. The seasons are changing so that it will not be long before he will have his stock feeding on alfalfa and other grasses.

W. L. MOORE, Denton Co., Texas.

### A Humane Mode of Hitching Oxen.

The farmers in Germany have at last dropped the cruel mode of hitching cattle to a double yoke attached to the forehead and horns, which had been thought good enough for more than a century. In Wurtemberg my own father and many others dropped that old style more than fifty years ago, and adopted either the single yoke or the collar and harness, both of which methods are better and more humane than the old yoke. In either case cattle can move their heads to each side and drive away a troublesome fly. We drive cattle in that way, either with two side by side, or with three, one in front and two behind, as we find the need, either to a wagon or a plow. No one who has ever tried the new way of hitching ever had reason to go back to the old style, as there is no doubt that cattle can perform more work with less effort or strain on themselves, either in single yoke or collar. When the use of the new rig came into general use, each way of hitching had its particular friends. Some say the collar is best, because the ox has to pull with shoulder and neck and has entire freedom for his head; besides, they believe that an ox can pull more from the shoulder. On the other side, the friends of the single yoke believe and claim that an ox pulls best and easiest by the head and has freedom enough to turn its head in any position. My father adopted the single yoke, and we found it a great improvement on the old-style double yoke. We believe in head-pulling for cattle, but as either method is better than the old style and neither of them is very expensive, it would pay any farmer to try the experiment. Of course we do not use carts, but four-wheel wagons. Our country is very hilly, which made some people hesitate before adopting the single yoke, as there is no doubt that cattle hitched to a double yoke can hold back a load better when going down hill. But it is a cruel thing to make the cattle do this, instead of making a brake perform that duty. With the new rig no one can bring a heavy load down our hills without brakes, and they had to be put on all wagons. Everybody has found that it is safer to trust to a good brake than, as formerly, to a yoke of cattle.

J. C. METZGER, Wurtemberg, Germany.

### Public Roads in Ohio.

The criticism of Galen Wilson, in the August number of the AMERICAN AGRICULTURIST, concerning the public roads in Ohio, applies not only to the northwestern part of the State, but equally well to every other part, so far as my knowledge goes. I know that the eastern and southeastern portions of the State are quite as bad. It is the legitimate outgrowth of want of system and common sense shown in the time selected and manner of working (?) the roads. Every adult male citizen, either in person or by proxy, turns out to "work out" his poll-tax on the roads (or pays his stipend to the supervisor, who is supposed to apply the money to the same object); and the object of every one seems to be to get the time in, some way or other; little interest being shown in the results of the work, generally. The supervisor (elected by the very men who work under his direction, perhaps, and hence more regardful of his personal popularity with them than of the work in hand) appoints the day for each piece of road, and collects his squad of citizens; then commences the tearing up and butchering of the roadway. The plows are run deep on each side of the road proper; the scrapers follow; and, as a result, you have piled up in the middle of the roadway a miscellaneous lot of muck, grass, clods, stones and sand to cumber the highway and make it worse than it was before. Occasionally some effort at rolling the surface smooth is made, but it seldom amounts to much in the way of smoothness. The so-called ditching along the sides is usually a failure, resulting, in rainy seasons, in puddles and ponds of water along the roadside, to stand and soak and stagnate in the hot sun during the warm season.

After the road is "worked" in the above fashion—and it seems that it is usually done at the worst time in the year, after the fall farm-work is over and the bad weather is about to set in—you will see vehicles meandering all over the roadway, from side to side, to avoid the piles and hillocks and ridges of miscellaneous stuff thrown up by the supervisor and his gangs, until the rainy season has fairly commenced; then look out for mud in its worst form, augmented and made worse by the stuff piled up in the roadway, and the insufficient, clogged-up side-drainage. This continues during the wet season. Winter comes and freezes the roadway into ridges and ruts worse than the most neglected of corduroy roads. Spring follows with its alternate thaws and freezings, and more mud, mud, mud, to the hub; and the mass is worked over and gradually floated back to the ditches for the next fall's plowing and scraping; and summer comes with its drying out of the mass, which is ground into an impalpable powder—"dust"—which is stirred up by every hoof and wheel and passing breeze, covering the wayfarer and everything within rods of the roadway.

And so the round of mismanagement goes on from year to year; thousands of days' work and thousands of dollars of money worse than thrown away in keeping up a worse than useless method—or, rather, want of method—of "working the roads;" and so it will continue until the people wake to the fact that they never will have even passable roads the greater part of the year, as things are now mismanaged. Then we may hope to see the poll-tax collected in *money* and turned into the general fund, and a certain sum set apart each year to macadamize and properly drain and keep in repair the roads, so that they may be good roads the year around and, as Mr. Wilson says those in Indiana are, be entirely free from mud at all seasons of the year.

STANTON WEAVER, Stark Co., Ohio.

### Farming for Olive Oil.

Olive culture has attained enormous proportions in Italy. It is computed that the amount of oil produced annually in the entire kingdom is thirty-three million gallons. France's production, although much less, is still considerable, being seven million gallons annually. The olive tree thrives best in a dry soil on slopes toward the sun, sufficiently sheltered. It attains a height of twenty feet usually (to even fifty feet in some localities), and frequently reaches an age which appears almost fabulous, one specimen near Nice, recently carelessly destroyed, having had a positive record of five centuries, and measuring thirty-six feet in circumference when it fell. The foliage is evergreen, having lanceolate leaves, which are gray underneath, and its flowers, which appear in June, are white and resemble those of the elder. The fruit is oval in shape, with a ligneous kernel inclosing an almond-shaped seed. The flesh of the fruit, which when ripe is of an intense violet-black color, yields about seventy per cent of its weight in oil.

The gathering of the crop begins in November and continues until May. The harvest is divided into three periods of two months each, the first yielding a high-colored oil called "fine," the second a straw-colored oil called "superfine," and the last a pale-colored oil called "extra superfine." The fruit is gathered from small trees by hand, and from large ones it is knocked off with poles. Women and boys are employed for this purpose, for which as wages they receive seventy-seven cents for every twenty quarts gathered. When the fruit is collected, it is taken to mills, where it is reduced to a paste. It is then placed in bags of esparto (Spanish rush) and squeezed under a press, the oil escaping into a receptacle underneath. This first pressure produces what is known as "virgin oil." The bags are then removed, soaked in boiling water and placed a second time under the press, thus yielding the ordinary oil of commerce. A third pressing follows, yielding an inferior oil used for illuminating purposes.

The dangers to which the olive trees are exposed are frost, wind, hail, and the dacus, a little insect which appears in the fruit, when it begins to get ripe, eating through the little stem which joins the fruit to the branch, thus destroying annually more than six hundred thousand dollars' worth of olives. The olive is also attacked by a disease called the *morphua* or *fumago*, which turns the entire tree black, and which lasts about ten years. There is as yet no known remedy. An acre averages from seventy-five to eighty trees, from which the proprietor receives a net profit of $26 annually. A great deal of care has to be exercised lest the trees or roots should be injured in any way, thus producing decay. It will be seen that this crop can be made profitable only when the cheapest labor is obtainable.

L. C. BROWN, Naples, Italy.

### Experience With a Southern Old Field.

When Horace Greeley, several years ago, in his advocacy of deep plowing, said there was another farm under the old one that would be thus made available, he truly represented the actual condition of nearly every old field in the South. The custom having been to plow the land no deeper than three or four inches, and sometimes even less, and that in a most ineffective and partial manner; the subsoil—in most cases of precisely the same character as the surface, and filled with organic matter—has been left untouched, and hard and impenetrable. The looser surface then washed off, and in places this hard subsoil was left bare until covered with wild growth common to the prevalent old fields. Such a field, on a rather steep hillside, which had been in corn, oats and rye, successively, until it would no longer bear a crop, and had been washed smooth in places, was plowed eight inches deep three years ago. The land was quite stony, but the loose stones were all laid in the furrows and covered by the next passage of the plow. The Acme harrow, which was used, never disturbed the stone, and the field passed through the winter without the slightest washing by the heaviest rains. An excellent crop of corn was taken off the next summer; and rye, with timothy and clover, were sown at the last working of the corn with a light, sloping-toothed, triangular harrow, made for the purpose. The rye yielded a moderate crop, about fifteen bushels per acre, but a heavy growth of straw. The present year the field has been mown for hay. The clover (peavine, or mammoth, or perennial clover) has made a wonderful growth; over large portions of the field it stood three feet high; elsewhere it lay down in places, and around some of the stumps, where rubbish had been burned, stalks of clover four feet long were abundant. On a few poorer patches the clover was thin, and was cut and spread as manure on the ground, as the land is too steep to haul manure on it. Millions of acres of old fields in the South might be treated in the same way, and as clover hay is worth $20 per ton almost anywhere, much profit might be made, in addition to the improvement of the land for the growth of cotton or corn.

HENRY STEWART, Macon Co., N. C.

### Draining Wet Lands in Vermont.

If farmers who have wet farms would expend the necessary amount for draining, they would find it was not foolishly spent. I have seen farms in this section so wet that they would take a wagon in to the hub in mud, which might be made dry and productive by expending a few dollars for draining. The soil could then be plowed and made to yield large crops. But the excuse the owner gives is, that he has no time to spend in that way; so it goes on year after year, or until some enterprising farmer gets possession of it. The first thing he does is to drain it, and after a while it can be plowed and worked over, and is one of the best farms in town, which before was the worst.

STANTON HITCHCOCK, Orleans Co., Vt.

### Abundant Crops in Kansas.

Reports from every part of the State show that the grain crops are abundant beyond precedent. The rainfall during the three summer months was plentiful, thoroughly soaking the ground and suppressing the chinch-bugs. Every kind of crops grew with unexampled luxuriance, and the harvests were abundant. The small grains are now threshed, and have turned out even larger than the expectations of harvest time. The aggregate grain crops of the State are estimated as follows: Wheat, 40,000,000 bushels; corn, 275,000,000 bushels; oats, 60,000,000 bushels. These, with the barley, flax, potatoes and other crops, represent an aggregate value of not less than $100,000,000. Kansas is doing very well, thank you.

A. H. DUFF, Pawnee Co., Kansas.

# OUR BASKET

**Ants on Fruit Trees.**—J. E. S., Fairfax Co., Va.: The small black ants which you find so abundant on your fruit trees are attending to the "little green bugs," or, more correctly speaking, green aphides, that are sucking the sap from the leaves and young succulent twigs. The aphides are often called "ants' cows," for they secrete a sweetish substance, of which ants are very fond, and when they want a drop they have only to coaxingly stroke the body of an aphis with their antennæ or feelers to secure it. If you will examine these insects while at work on the tree, through a lens, you will soon discover with how much care the ants attend to their cows. The ants do no harm to the trees, but the aphides do, and for this reason should be destroyed. Dusting with tobacco, or syringing with strong tobacco-water, are the usual methods of destroying them. Soapy solutions are also quite efficacious, especially if a little tobacco is added.

**Lincoln Long-Wool Sheep.**—We have a number of inquiries about Lincoln sheep, and where they can be obtained in the United States. Those having this breed for sale would do well to advertise it in the AMERICAN AGRICULTURIST.

**Kansas Horticulture.**—The Biennial Report of the Kansas State Horticultural Society, edited by Sec. J. C. Brackett, which has just been issued, is a model report in every respect. In addition to the proceedings of the Society, it contains a complete and excellent manual on Kansas fruits, and a similar one on floriculture, forestry, and entomology. It closes with a fruit-list for Kansas, arranged according to the different fruit districts of the State. To Kansas horticulturists, as well as agriculturists, this volume is almost indispensable.

**Pear Blight.** — Thomas Turner, Perry Co., Ill.: Your pear tree is dying from an attack of a disease widely known as pear blight. The first indications of the presence of this disease is the sudden appearance of dead leaves on the ends of the young twigs or those on an entire large branch. A few days later the bark will shrivel and turn black, and this may extend downward along the main stem to the ground. The tree may die the first season, or linger for two or three years, one side of the stem and a few branches remaining alive. Sometimes cutting off the affected branches as soon as they show the disease, and then smearing the wounds with linseed oil, will check further progress of this malady; still, we much doubt if any absolute and certain remedy has as yet been discovered. It prevails in a more or less severe form in all of the Northern States where the pear is most extensively cultivated.

**Potatoes Mixing.**—Q. W. Huff, Wasco Co., Ore., asks: "Will potatoes and such vegetables mix?" Well, this depends. They do mix very frequently in the baskets while different varieties are being dug, and oftener still in the cellars, when those from one bin get into the adjoining one; but in the field, where different varieties are growing alongside of each other, it is simply impossible for them to get mixed. The only way in which different varieties can become "mixed" (crossed) is by fertilizing a variety with the pollen of another, and from the seed thus produced new varieties are frequently raised, with possibly some of the characteristics of both parents.

**Transplanting and Pruning.**—F. D. Grant, Davies Co., Utah, asks whether elm, maple and ash trees should be transplanted in autumn or spring. In favorable soil and locations it makes but little difference which season is chosen, but where the ground is very heavy, and wet in winter, it is better to defer planting until spring. Nearly all the most successful small-fruit growers cut out the old wood from cap raspberries soon after the bearing season is over.

**Waste of Manure.**—H. C. McLean, Monmouth Co., New Jersey: (1) There is no drain upon the resources of a farm more certain to impoverish it in the long run than the practice of keeping the manure in an open barnyard, from which "dark-colored water flows off after every heavy rain." That dark fluid is the very life-blood of the farm. If it is desired to keep the manure and straw in the open yard, much of the loss can be avoided by making the surface sloping gradually to the center. (2) There is no need of keeping the droppings of horses and cows separate. In fact, it is quite advantageous to mingle them.

**Cabbages.**—H. T. Stringham, Wayne Co., Mich.: Early cabbages, for use in July and August, should be set out as soon as the frost is out of the ground in the spring. The best variety is Early Jersey Wakefield. Sow the seed in a hot-bed the last of March or beginning of April. Transplant before the plants begin to crowd, and avoid too much heat. The great aim should be to get strong, stocky plants. Henderson's Early Summer is a much larger cabbage than Jersey Wakefield, but is later. Sow and set out at the same time as Jersey Wakefield, and give more room — say for Jersey Wakefield two feet by eighteen inches, and for Henderson's Summer, two feet by two feet, or two-and-a-half feet one way and eighteen inches the other. The object of setting in rows two-and-a-half feet is to allow a wagon or cart to drive between the rows without crushing the cabbages.

**Propagating Weigela and Althea.**—J. E. Heald, Fairfield Co., Conn.: Althea proper is the marshmallow, but we suspect what our correspondent means is the *Hibiscus Syriacus*, commonly known as the "Rose of Sharon." This shrub, as well as Weigela, is readily propagated from seed, cuttings, or layers. In a small way, the layer method is the most convenient and reliable.

**Mad Dog.**—Because the dog has a high temperature naturally, and an excited, nervous system, he is easily tormented into a species of fear and frenzy. And especially is this the case, should he become lost, or strayed away from his master. So at this season, and at such times, the idle boy or man sees symptoms of hydrophobia in the lost and worried dog, and chases, stones, or shoots at him, till the conclusion that he is mad furnishes the thoughtless, ignorant, and cruel sufficient warrant to persecute the poor frightened brute even to death. A hundred to one, he is less mad than his pursuers.

**Opuntia Flowers.**—Prof. W. A. Sanders, Fresno Co., Cal., informs us that not all opuntias have yellow flowers, as stated in a previous number, but in Southern California some have purple, red, and greenish-white flowers.

**Maple Trees Dying.**—W. M. B., Angelica, N. Y.: The two valuable maple trees on your lawn which "show symptoms of dying" may be infested by some species of scale insect or borers in the young twigs and branches. Examine the trees carefully, and if you discover the pest send us a specimen for examination and identification. The sugar maple is often attacked by a large borer, which penetrates the solid wood to the depth of two or three inches, or works its way around the tree through the sap wood. Sometimes a number of these borers will—if at work at the same time—completely girdle the tree and cause its death.

**Cabbage Bug.**—Jacob Buchi, Williamson Co., Tenn.: The shining black bug, gayly ornamented with bright yellow spots, which you found swarming over your cabbage plants, is a pest widely known at the South as the Harlequin cabbage-bug (*Strachia histronica*). It not only feeds upon cabbages but all other species of plants belonging to the same family. Turnips, radishes, horseradish, mustard and other cruciferous plants appear to be its natural food. It was first noticed in a few gardens in Texas about twenty-three years ago, and from that time to the present it has been generally spreading over the Southern States and northward. At first, it was supposed to be a native of the warmer regions of Mexico, and for this reason would not be likely to thrive in our Northern States, but several years after its appearance in Texas was found in great abundance in the elevated regions of New Mexico, where the winters are fully as severe in the way of low temperature as they are in the latitude of New York. This cabbage-bug is a native of the same regions as the Colorado potato-beetle, and while the latter is feeding on the wild potato and other species of the *Solanum*, the former takes to the mustards and other *Cruciferæ*. But unfortunately for the farmer and gardener, these insects belong to widely separate orders, for one is a beetle and the other a true bug. Beetles have jaws or mandibles and chew their food, while the other sucks out the juices of plants or animal substances upon which they feed. This cabbage-bug no sooner gets upon a plant than it pierces the leaves or stem and sucks the sap; consequently, applications of poisons to the surface of the leaves are not effectual in destroying bugs. The mature bugs live over winter, hiding under old rubbish and in the ground, and there are usually two broods in a season. Hand-picking is the only effectual way with which we are acquainted for getting rid of this pest.

**Managing an Incubator.**—H. Halsey, Schuylkill Co., Pa., writes us: I have been using an incubator for hatching chickens, following the directions in your book, "Profits in Poultry." Half the eggs in the incubator hatched all right; the rest were four days later in coming out, and the chicks were either deformed or could not break the shell at all. Was there sufficient moisture? Is there nothing I can do to facilitate hatching besides dipping the eggs in water? I have been obliged to turn the eggs twice a day by hand. Is that right? Should I have an egg-turner? *Answers:* The fact that some of the chicks were four days beyond the proper time in coming out indicates that the temperature was too low, which may be due to the thermometer being incorrect. The directions in the book do not advise "dipping eggs in water." Follwo the directions. Keep the temperature of the egg-drawer as near 103 degrees as possible. For moisture, use a sponge about the size of an egg, dipped in warm water, for every fifty eggs. Place the sponges in the egg-drawer, among the eggs. Do not cool the eggs at all, except when they are being turned, which can be done by hand in a few minutes, by simply rolling the eggs over. An egg-turner is unnecessary. As soon as the first egg pips, add two or three more sponges of water, shut the drawer, and allow it to remain closed until the hatch is over.

**Gypsum in Kansas.**—E. A. M. Smith, Fulton Co., N. Y.: A deposit of gypsum near a railroad in Kansas ought to prove valuable. Simply ground to powder in a raw state it is called land plaster; calcined and ground, it is plaster of Paris.

**Food for Fowls.**—A Subscriber, Montana, asks: 1. What quantity of Indian corn will be required to feed 150 head of poultry for one year on a grassy range of several acres in Montana? 2. If the fowls are fully fed on corn, potatoes and pumpkins, how many eggs should be reasonably expected? (1) The usual estimate is one quart of corn daily for twenty hens; but corn is not a proper food for laying hens, though extensively fed, as it causes them to fatten too readily. It answers well as a portion of the winter diet, but should not be given in summer. If the fowls have a range, no grain is necessary in summer. The more the hens are compelled to hunt for insects the better. Potatoes and pumpkins, with a pint of bran added, for every twenty hens, may be given at night. In winter the quantity may be doubled, and fed in the morning, with a pint of corn or wheat, for twenty hens, at night. Chopped clover hay, scalded, is also excellent in winter. No quantity of food can be fixed upon as a daily allowance of fowls, as hens differ in appetite, age, activity, prolificacy, and aptitude to fatten. (2) If the hens average ten dozen eggs each per annum they will do well, as allowance must be made for sickness and other drawbacks. It is almost impossible to secure a flock that will be uniform in all respects.

**"What Crop Does Best With Clover?"**—W. C. C., New York: It does not hurt any grain crop to sow clover seed with it in the spring. In sections where winter wheat or winter rye is grown, timothy seed is usually sown with it in the fall, and the next spring clover seed is sown broadcast on the land as soon as steady cold weather is over. In sections where only spring crops are grown, the clover and grass seed are sown after the land

has been prepared and the grain crop put in. The clover and grass seed are sown broadcast, and the land is gone over with a light smoothing harrow or roller, to slightly cover the seed. Care must be taken not to cover the seed more than half an inch deep. More clover and grass seed are lost from covering too deep than from not covering at all. As to which of the grain crops it is best to seed with, opinions differ, especially in regard to oats. There are farmers who contend that oats are one of the best crops to seed with, while the majority of farmers think they are the worst possible crop to select. They think that rye, spring wheat, or barley, are far better than oats. It is largely a question of climatic differences. At the North, where oats continue growing till August, and where the crop is heavy and the shade dense, the young clover and grass plants are liable to be smothered, but at the South, where the crop is not so heavy and is harvested earlier, oats are considered a good crop to seed with. We are safe in saying that if you are going to sow rye—either winter or spring—you should certainly not neglect to sow clover seed with it in the spring. In our opinion, there cannot be a better crop to seed with. If you are going to sow wheat, seed with that. If barley, and you do not intend to follow it with winter wheat, by all means sow clover with it. It is an excellent crop for the purpose. But if you must sow oats, put on plenty of grain and clover seed, and run the chances.

**Water for Stock.**—Mrs. Mary F. Martin, Adams Co., Ohio: Your pond, filled with stagnant water, covered in summer with green vegetation, is an unwholesome water supply for stock, and can scarcely fail to be a source of malaria. It would be far better to drain it and cultivate the land it covers. If it is supplied by springs they may be conducted into a sunken trough or shallow brick cistern laid in cement mortar. If the pond is wholly supplied by surface water, a well would be better, unless the water in the vicinity contains Epsom salts, or other injurious substances, in solution. In that case a new pond is the best available resource. It may be made to hold water if it is bottomed with puddled clay. This is clay packed down hard while in a moderately damp condition. If this is not available, cover the bottom and sides with a concrete made of gravel or broken stone mixed with cement and sand.

**Ensilage Without Weights.**—Donaldson Bros., Georgetown Co., S. C.: It is true that it is not necessary to plank or weight the silo when filled, as stated by John Gould on Page 283 of the AMERICAN AGRICULTURIST for June. Quite a large number of silos were filled last year in the West, and simply covered with a foot or two of marsh grass, chaff, etc., well stamped down, especially about the edges, without being covered with planks or weights. The ensilage kept very well, even better than where a tighter covering and heavier weights were applied. These silos are of wood, however. Ensilage does not keep as well in silos of masonry. In filling silos that are not to be weighted, it is important to stamp the ensilage down thoroughly as the progress goes on, especially at the corners and sides.

**Caterpillars on the Elm.**—T. Metcalf, Washington Co., R. I.: The two caterpillars taken from an elm tree had spun up in their cocoons when they reached us, and in this stage it is often very difficult to determine the different species of moths and butterflies. We think, however, that the caterpillars are those of a handsome yellow moth with two large blue spots margined with black in the center of the hind wings. The scientific name of this moth is *Saturnia Io*. When the caterpillars have completed their growth they crawl to the ground, and, hiding under dead leaves or other rubbish, they make an irregular cocoon which is very thin and almost transparent. This moth and its caterpillars are not usually very abundant, and for this reason we do not think your elm trees are in danger of serious injury from this insect.

**Helps for British Columbia.**—I am glad to see in the many farm-houses that I visit that the AMERICAN AGRICULTURIST is pretty well circulated through this country, but it would be well if our farmers who take your paper would correspond with you as to their requirements. We need a good grass to grow on our ranges. Sanfoin might stand if it once got a good hold, but I am very doubtful, as I see by some books that it was not a success in New England, and I take it that the winter there is not so severe as ours. Perhaps some of your subscribers can tell us what to try. Perhaps in the same way we can learn what kind of grasses will do best on our swamps. The same grass will not thrive on every swamp, as the conditions of each are different, some being alkali, and in others the water stands different lengths of time. I have found no better grasses for my swamp than Red-Top and Fowl Meadow. This year I am trying Alsike clover in the driest parts. In the AMERICAN AGRICULTURIST I often see how useful implements can be made at no cost. This is of the greatest assistance to farmers in a country like this. Plans of sheds showing the cheapest and best form of construction are also of value.

BALBUS, Kamloops, B. C.

**Ore from Oklahoma.**—N. R. Butterfield, Indian Territory: The specimen which you obtained in Oklahoma, and sent to this office, is red hematite iron ore, similar to that found in Tennessee, Alabama, Missouri, and other localities. It is a valuable ore, and if there are extensive deposits of it in Oklahoma it may at some time prove to be a source of wealth for the newly-settled region.

**New Jersey State Grange.**—Miss F. A. L., Essex Co., N. J.: The Master of the New Jersey State Grange is Richmond Coles, Woodstown, Salem county. The Secretary is M. D. Dickinson, Woodstown, Salem county.

**National Chrysanthemum Society.**—Born in Buffalo, N. Y., Aug. 22, as the youngest, and a very lusty child, of the Society of American Florists, it already counts more than fifty members. The following are the officers elected: John Thorpe, of Pearl River, N. Y., president: W. K. Harris of Philadelphia, vice-president; Edwin Lonsdale of Philadelphia, secretary; John Lane of Chicago, Ill., treasurer.

**A South-American Fair.**—The second International Fair and Cattle Show of the Argentine Agricultural Society is announced to be held at Buenos Ayres next April, under the auspices of the government of the Argentine Republic. It is to open April 20, and continue until May 11, 1890. Liberal premiums are offered for live stock, agricultural implements and products, and practical essays upon subjects connected with agriculture. The competition in live stock and machinery is open to the world, while in agricultural products it is exclusively national.

**Grass for a Light Soil.**—George McGlauflin, Spokane Co., Washington: It would be very difficult to find a perennial grass which would flourish on a light, sandy loam, with a porous subsoil, where the summers are very dry. Probably Tall Meadow Oat grass (*Arrhenatherum avenaceum*) would be as likely to succeed as any. But if the soil is broken up and seeded to alfalfa the returns will abundantly repay the outlay. It is the best situation for alfalfa.

**Killing Weeds and Grass.**—T. C. Thompson, Kane Co., Ill.: Sulphuric acid or salt, in sufficient quantities, will destroy vegetation in gravel walks, but either will greatly impair the walk. The former is as destructive to shoe-leather as to plant life.

**Society of American Florists.**—It was a very successful and indeed a profitable meeting—that of the florists in Buffalo, August 20-23. Among the exhibits were a most excellent display of gladiolus, about 150 different varieties, by James Vick; curious orchids, by Pitcher & Manda; bulbs, by Vaughan, Peter Henderson, etc. The society, financially, seems to be in a very prosperous condition. The efforts of the society to secure lower express rates on plants have not been altogether crowned with success during the past year, double rates being yet exacted for plants shipped in open packages. No practical plan of action was proposed. The committee on bulbs recommends the reduction or entire abolition of the bulb duty as in the interest of florists and the public at large, and the society adopted this view. Mr. John Thorpe's recommendation to petition Congress for a reasonably large appropriation in behalf of the establishment of an experimental garden to be managed by a practical man, is also acted upon by the society. A significant feature of the meeting was the almost unanimous uprising of the body of florists against exaggerations in chromos and engravings, culminating in the establishment of a committee of control to whom catalogue makers are required to submit illustrations of novelties with specimens of the original for comparison and official indorsement. The Florists' Hail Association is flourishing; and a Florists' Protective Association is called into existence for the purpose of affording means of protecting members against dishonest dealers. Many excellent papers relating to floriculture were read. One of the very best was that on landscape gardening by Mr. McMillan, superintendent of the Buffalo parks. The essayist comes out for nature against unnatural art; for green lawns and trees and shrubs with healthy green foliage against the contortions and malformations practiced by artists in ribbon, foliage and flower beds and against the free use of variegated foliage. The next meeting will be held in Boston, Mass. The following are the new officers of the society: J. M. Jordan, of St. Louis, Mo., president; Michael H. Norton, of Boston, Mass., vice-president; William J. Stuart, of the same place, secretary (re-elected); M. A. Hunt, Terre Haute, Ind., treasurer (also re-elected). T. G.

**When to Prune.**—"Inquirer," Pittsburg, Pa.: The best time to prune apple trees depends largely on the manner in which it is performed. If the superfluous growth is kept rubbed or pinched off as it appears, it may be done all through the growing season. Where it is necessary to remove larger growth, the best time is late in winter or very early in spring, before the buds begin to swell. Keep down or cut away all water sprouts, and thin out the top of the tree, so as to leave an open head, which the air and light can penetrate.

**Salt Pickles.**—Thomas Wildsmith, Jefferson Co., Alabama: Green pickles will keep perfectly in strong brine. No water is needed—merely place a layer of the cucumbers or other vegetables in the bottom of a cask or jar, and cover them with salt. Successive layers of the vegetables and salt are added from time to time until the vessel is filled. The juice of the vegetable will draw out and with the dissolving salt will form a brine. A board with a few holes bored in it, and loaded with a heavy stone, must be kept on top of the pickles to hold them down. If they float and come in contact with the air, speedy decay follows.

**Plentiful Harvests in Kansas.**—We have this year the largest yield of wheat and oats ever known, and the prospects for sorghum, millet, corn, and all kinds of vegetables are the best I ever saw in any country. We have had plenty of rain all summer. A. H. DUFF, Pawnee Co., Kan.

**In Favor of Clean Eggs.**—Mrs. E. English, Columbia Co., Wis., protests against the marketing of dirty eggs, and desires to discourage "the reprehensible practice of country merchants of buying and selling dirty and disgusting-looking eggs; some even putting so many dirty eggs among the clean ones as to render them all unfit for use."

**Drying Okra.**—Mrs. A. G. Edwards, Mobile Co., Ala., writes that this vegetable is rarely dried satisfactorily, as it is always permeated with a woody taste, owing to the spreading out on boards. The usual way is to cut the pods in rings, string and hang them against the boards, or spread on a pine board, to remain over night. The next day the okra will have partaken of the pine taste to an unpleasant degree. Mrs. Edwards is now experimenting with one of the "AMERICAN AGRICULTURIST Premium Cooking-Stove Dryers," which she thinks will prove a perfect success. We have no doubt of it.

**Corn Silage.**—Henry C. Yaeger, Macoupin Co., Ill.: It is scarcely worth while to publish articles relating to ensilaging uncut corn. The extra labor of getting it out of the silo for feeding costs much more than to cut it before it goes in. Fifty acres of B. and W. corn, if it is even a fair crop, should yield a thousand tons of green fodder. If octagon silos were built after the plan described in the AMERICAN AGRICULTURIST for last June, with each side fifteen feet wide, inside, and twenty feet deep, three of them would hold the entire crop. The three would cost about $450, with lumber at Chicago prices.

**Dry Season in Manitoba.**—Fred D. Cooper, Rosegarland Farm, Manitoba, writes us under date of August 12th: Our crops have turned out far better than any one expected, after this intensely-trying year. It is simply wonderful how we get on without rain.

AMERICAN AGRICULTURIST
FOUNDED IN 1842

OCTOBER, 1889.

## Agriculture in the Schools.

An increasing demand is expressed, particularly in the Western and Southern States, for the teaching of agriculture in the district and common schools of the country. The demand is a legitimate one, and the fact that it is growing in intensity is one of the signs of the times.

The South is even more interested in this matter than other sections of the country. We believe that Mississippi has already enacted some legislation on the subject, and similar measures are being considered in Texas and Alabama. These States and their neighbors are beginning to appreciate that agriculture is their great foundation industry, and that the way to improve it and make it more popular, and thus benefit the whole State, is to begin with the child, and bring it up with a knowledge and love for the farm and for the natural sciences that pertain so closely to agriculture.

It will be objected that the ordinary district school-teacher is not competent to give instruction in a general way on the science of agriculture, but this can be overcome by a properly prepared series of plain text books. These should be so arranged as to be thoroughly within the comprehension of the teacher to instruct, and of the scholar to understand.

Properly conducted, the teaching of agriculture in the common schools would greatly add to the scholars' interest and to the value of the education they received. As it is at present, in thousands of our country schools the instruction is wholly apart from the actual life of the scholars. The teaching is a weary round of book studies, and the wealth of practical instruction that is to be gained by a proper consideration of the every-day life and natural surroundings of children is entirely missed. Besides turning the young mind in the direction of agriculture, such instruction in the common schools would tend to increase the inborn love of the soil, and sow the germs of State and national pride and patriotism. These important influences should never be overlooked in the conduct of our public school system.

## Farming as a Profession.

Too little attention has been paid to the fact that agriculture is a profession, requiring as much skill and preparation to secure the best results as civil engineering, or the professions of law or medicine. It has been erroneously supposed that anybody could become a farmer. An impression has existed that the culture of the soil is degrading, and that it affords no chance for an ambitious young man to gain an honorable position among his fellows. It is only too true that many who till the land are unskilled, and thus unfitted for their work. This, however, is no reflection upon the work itself. The hundreds of worn-out farms that can be found in every Eastern State call loudly for bright young men, well equipped mentally, morally, and physically; young men who have a love for life in the open air, and a keen interest in Nature. These farms have been run down by lack of skill in cultivation.

No other calling can afford more advantages or comforts than farming. Yet, as a class, farmers are over-worked, poorly fed (or, more correctly, improperly fed, since their tables contain an abundance; but, too commonly, of food that does not nourish), poorly paid, and frequently isolated from the world.

All this is unnecessary, and largely the result of ignorance. What would be thought of a man who should go into court to conduct a case who had never looked into a law book? Or, how would a man be regarded who should undertake a surgical operation when entirely ignorant of anatomy? What but failure can be expected when a man enters upon any business without full preparation and knowledge of the subject? There are thousands of boys who will enter upon this work. They may gain from it pleasure, profit, and the honor which comes to skilled workmen in any profession. In the first place, a farmer needs to be educated as thoroughly as men in other professions. "The race is to the strong," not only in body, but in mind, and mind has far more to do with successful farming than muscle. There are differences of opinion as to the several courses of study that one proposing agriculture should best follow. But for those who wish to excel in their calling, a thorough course in a well-equipped agricultural college furnishes, undoubtedly, the best preparation. We are well aware that there are many successful and prosperous farmers to be found throughout the land who have never entered the gates of a college of any kind, yet, with every succeeding year, it becomes more evident that the broader the educational foundation the better chance there is for signal success in any vocation where mind is powerful over matter.

## Reforming the Produce Trade.

The brief note in our department of "Matters of Business," relative to the proposed Farmers' Federation of the Mississippi Valley, is enough to condemn the enterprise, in the minds of all intelligent farmers and business men. This is an instance of the idea that is prevalent to a greater or less extent among the farmers of the country, as to means whereby they may secure better prices. There is a disposition to favor schemes of enormous dimensions, because their very size fills the mind to the exclusion of the impracticability of carrying out their details.

Reform in selling farm produce is not coming through the spontaneous development of a great undertaking for controlling the crops of the nation, or any considerable portion of it. Our farmers must learn to creep before they walk. They must learn to have confidence in each other locally, and must succeed on a small scale before they attempt any larger and further-reaching measure. It is with these matters as with the farmers' rights in other respects—betterment depends, first of all, upon the action of the individual farmer. If he has not the education, and the intelligent confidence in his fellow-men, necessary to the successful management of a local co-operative produce exchange, he certainly is not qualified to enter into any such scheme as the proposed Federation.

It is the compact organization of local bodies which has demonstrated that they can be successful, in a small way, that in time will build up the larger and more permanent corporations which we may hope to see in the near future, as a development of the application of business principles to the farm. The desired reform in bringing producer and consumer nearer together is not to be accomplished by anything less than a most-thoroughly tried and experienced combination. Much as we may deplore certain evils that speculators and middlemen inflict upon the producing classes, indulging in visionary and impracticable theories will not reform these evils. Such matters demand the coolest and most clear-headed consideration from every standpoint. The most mature business judgment must prevail. There is no golden road to the needed reform. It must come through slow and earnest experience.

The progress of co-operation among farmers — especially in buying and selling together—is marked with numerous disastrous wrecks. But, in spite of these, progress has been made. The greatness of the advance is perhaps best shown by the little attention that is given to the unbusiness-like proposition which has suggested our remarks. The AMERICAN AGRICULTURIST most earnestly believes in the principle of co-operation as applied to the farm, but neighboring farmers must learn to co-operate before any effort at united business interests on a larger scale is undertaken. A close personal and social acquaintance between farmers, such as the Patrons of Husbandry or the Farmers' Alliance begets, is a most excellent preparation for the faith and intelligence that must underlie success in farmers' co-operative efforts.

## Does the Farm Pay?

Every farmer should ask himself this question at the close of harvest and answer it honestly. The farm does not pay if it merely affords a living and prevents the accumulation of debt. It may do more than this—it may even decrease debt and add to the value of stock and improvements—and yet not pay. It being assumed that the labor and superintendence of the owner is equal in value to the support of the family, then the net accumulations of the year must be equal to the legal interest upon the whole capital invested, or the farm does not pay. This is a simple method of farm book-keeping, and will always answer the question; yet too many farmers would shrink from applying the test. If the farm does not pay to at least this extent, the situation should be rigidly canvassed, with a view to finding better methods. Labor, brain and capital working together furnish the best possible combination for success, and when they are centered in one individual should be able to command it.

**The Wife Cannot Get Along Without It.**—The AMERICAN AGRICULTURIST is the only paper I take true pleasure in reading. I read it over and over. I intend to take it as long as you will print it, and my wife says she could not get along without it, and I must say the same. W. B. MUNGER, Blair Co., Pa.

## SCIENCE IN FARMING.

### Pear Blight and Apple Mildew.

The Bordeaux mixture has been used with such success against pear blight, by Prof. B. T. Galloway, during the past season, that he regards this treatment as worthy of general trial. He explains (Circular No. 8, Section of Vegetable Pathology, United States Department of Agriculture, soon to be published) that the mixture, when sprayed on the young leaves, serves to destroy the germs or spores of this disease. The fungicide was prepared as follows: Six pounds of sulphate of copper was crushed and dissolved in sixteen gallons of water; four pounds of fresh lime was then slaked in six gallons of water, using, of course, another vessel for the purpose; when the two solutions had cooled they were poured into a barrel and thoroughly mixed by means of a long wooden paddle. This was applied on June 5th to a lot of 50,000 pear seedlings near Washington, the treatment being four times repeated at intervals of ten days. The cost of each application was $4.75, including forty pounds of sulphate of copper, thirty-five pounds of lime and $1.50 for labor. The entire block was kept in perfect condition, while a large lot of budded pears not three hundred yards distant that were not sprayed, lost nearly all their leaves.

The apple powdery mildew (*Podospæra oxycanthæ*), which threatened to wholly destroy a lot of 200,000 budded apple stocks in a Baltimore nursery, succumbed to the spray of an ammoniacal solution of carbonate of copper applied twice at a total cost of eight dollars. These trees and two other large lots, similarly treated, have since made a fine growth and have been free from the disease. The solution was prepared in this way: Six ounces of carbonate of copper—which is a very fine powder—was weighed out and placed in an ordinary water-pail partly filled with water, into which half a gallon of ammonia was slowly added, a complete mixture being perfected by stirring with a wooden paddle. Two minutes' stirring was sufficient to completely dissolve the copper, and the solution was then poured into a barrel containing forty-four gallons of water, and after a moment's stirring was ready for use. Both solutions require special nozzles for a proper application, which are described in the forthcoming bulletin. The tests will be of remarkable interest to nurserymen and fruit-growers everywhere.

### Exhibits by the Stations.

Every experiment station ought to have an exhibit in its State agricultural fair where possible. The same collection should be shown at as many county and local fairs as practicable. When properly made, such exhibits will do more to interest practical farmers in the station's work than the publication of hundreds of bulletins. The object of these displays should be to arrest the attention of every passer-by, and to this end attractive arrangement and striking comparison should be aimed at. The exhibit should be in charge of courteous attendants, who should be provided with printed matter for distribution that will answer all kinds of questions about the station and its work. Senior students at the agricultural colleges make excellent attendants. Of course our stations cannot prepare for these temporary exhibits any such array of their work as forms so prominent a feature of the agricultural department of the Paris Exposition. There the various experiment stations have vied with each other in making the most complete and interesting exhibits possible. They have employed large photographs of buildings, crops, animals, processes, etc., where these or models could not be themselves shown. The French scientists have been remarkably successful in bringing out those features in their exhibits which appeal most favorably to the eye and to the judgment of the practical farmer. At the World's Fair in 1892 our stations' exhibit should form a still more important feature of the agricultural department. This is but one idea for what should be the grandest exhibit of American agriculture ever seen. Here, as throughout the agricultural features of the big show, the object should be to demonstrate the advance that has been made. What an interesting exposition could be prepared of the progress of science in agriculture!

### Notes from the Stations.

The importance of testing the variety of oats designed for seed will be better appreciated when farmers know that under ordinary methods of field culture probably less than one-half of the kernels sown produce mature plants. This is the conclusion arrived at by the Illinois station. It is a most important practical question.

A good scheme from the farmers' standpoint is the inspection of seeds and stock feed inaugurated by the Delaware station. It appointed in small districts a prominent and reliable farmer as an inspector to select one or more samples of every kind of seed and feeding stuff offered for sale in his locality. This method of selecting samples is a practical one. The conclusions of the seed tests (Bulletin 7) indicate that the seeds sold in Delaware are better than its citizens have expected.

The midsummer report of progress from the Maryland station shows that it has under way tests with 246 varieties of orchard fruits; vegetables, 755; field crops, 239; small fruits, 642; grasses, 103 varieties. Here is a total of 1,488 varieties of useful plants bearing different names and nearly all adapted to the climate of Maryland. Certainly such trials intelligently reported upon must prove of value to the farmers of the State if they will only keep posted.

Cottonseed meal cannot be profitably fed to hogs, according to the experiments of the Kentucky station. Much corn and cob meal was wasted there in feeding to hogs because picked over and refused. Equal parts of this meal and shipstuff made the cheapest nitrogenous food. The pigs so fed were much stronger than those which consumed corn or starchy foods alone. Shelled corn produced fat the most readily and corn meal produced it the most cheaply. Both were fed at a profit for sixty-three days. Chester Whites fattened more readily than the Thin Rinds.

The day of the chinch bug, the greatest enemy of the Western wheat-grower, seems to be doomed. The Kansas Experiment Station and others have this season been successful in distributing among this pest bugs infected with a disease commonly called "White Mold." It rapidly spreads among the bugs and causes their death by the million. Prof. Snow is quite jubilant over the satisfactory results obtained this year, although the chinch bugs on which to experiment have been less rampant than usual. The introduction of a safe disease or insect enemy that shall protect against the chinch bug will be worth all that the Experiment Stations cost for years.

The ordinary farmer cannot afford to make comparative tests of implements of the different classes, and yet he above all others is anxious to get the machine that will do the best work under his circumstances. With such implements as can be tested to practical advantage, the experiment stations have a work to do. The Mississippi Station has led the way with a trial of a variety of hay-presses, in which interesting results were obtained (Bulletin 7). The important point is made that the more dense the bale the greater the weight that can be put into a 12-ton car, the freight charges being the same per car. "No shipper can afford to buy at any price, or even to use a press which will not give a density of at least fifteen pounds per foot."

The diffusive process of sugar extraction is making great headway against the old method of milling, on the Louisiana cane plantations as well as in the sorghum sugar factories. The two system have been well tried at the Magnolia Sugar Experiment Station at Lawrence, La., under the supervision of the United States Department of Agriculture. About two million pounds of sugar were made there last year. On the average, each ton of cane worked by diffusion yielded 222 pounds of sugar against an average of only 168 pounds by the milling process. But for various hindrances, the showing in favor of diffusion would be still greater. The Department, co-operating with the Louisiana Experiment Station and other plantations, will continue these very promising investigations on a larger scale. Our readers doubtless understand that by diffusion the sugar is extracted by soaking the chaffed canes in several changes of water; by the old system the juice was pressed out by running the canes through mills.

Prof. Shelton backs up Dr. Miles and Joseph Harris in the opinion that swine cannot be "fed for lean," as Professors Henry and Sanborn have maintained. Last winter five hogs at the Kansas station consumed 5,597 pounds of a mixture of two parts of shorts to one part of bran, while another lot of five similarly selected ate 6,243 pounds of corn meal. The first lot thus received nearly twice as much albuminoids (so-called lean-meat substances) and nearly four times as much mineral matter (so-called bone-strengthening material) as the corn-fed hogs. But the latter's bones were the stronger, and while the corn-fed hogs were rather fatter than the first lot, there was no appreciable difference in the amount of lean meat, or in its distribution with the fat (marbling)! The corn diet did not seem to injuriously affect the vital organs.

EDWARD M. SHELTON.

Prof. Edward M. Shelton, director of the Kansas Experiment Station at Manhattan, has recently received an appointment as head of the agricultural experimenting and educational department of Queensland in Australia, at a large salary. Mr. Shelton was recommended for the place by Secretary Rusk, of the United States Department of Agriculture, and is specially qualified for it. Born in 1846 at Huntingdonshire in England, he came to Western New York in 1855 and removed to Michigan five years later. He was graduated at the Michigan Agricultural College in 1871, and afterwards studied under Dr. Manly Miles, in the Illinois Industrial University. He went to Tokio, Japan, about this time and superintended the establishment of the government experiment farm there, in which he was very successful. Returning the following year, he joined the Greeley colony in Colorado, but later went back to the Michigan College, and since 1874 has been Farm Superintendent and Professor of Agriculture at the Kansas Agricultural College. Here he has won a name for himself by his capacity in scientific experimenting, as well as in the thoroughly practical part of farm-work. He is destined to have a great influence in the enterprising colony to which he has been called.

## FARMING IN FOREIGN LANDS.

Special efforts are being made by certain Irish agricultural societies to stimulate the cultivation of prickly comfrey. It is claimed that it will produce 100 tons of green food to the Irish acre, sufficient to keep ten cows for six months, and that a clear profit of $500 per acre can be made by selling the sets at two dollars a thousand.

Tobacco culture has received marked attention in Borneo during the last year, six experimental farms having been established and worked in different parts of the island. The quality of the crop has been of the highest, notwithstanding the dry season, and is worth $170,000. Preparations are being made for planting the crop on a much more extended scale.

The reclaiming of 10,000 acres of tidal flats on Mud and Boundary Bays in British Columbia has been begun. A dike or sea wall sixteen feet on top will be built. This, and the dividing dikes, will be used as public roads. Large parallel ditches will be built on the section lines, which will serve to drain the reclaimed land. The company expect the dominion will grant them the reclaimed land.

Ensilage milk is objected to by one of the largest dairy companies in London, the Belgravia. It would not renew any contracts for this winter unless the producers would agree not to feed ensilage. It claims that such milk smelt strong when the railway cans were opened, and tasted rank, and it was returned by numerous customers in whose warm London houses its offensive nature seemed to develop.

The distillation of essential oils from various species of plants, such as lavender, thyme, fennel, rosmarine, etc., is quite profitable in southeastern France. The country is here very arid and sterile, and these humblest of plants are, by industry and careful management, made to give prosperity to a large number of people. The United States is the largest consumer of these oils, and in time they will doubtless be produced in our own country. The still required for distillation is simple and inexpensive.

The acreage of rye is steadily on the decline in all Europe. In England it has almost entirely disappeared. In Belgium it has lost much ground. In Germany and Russia it only holds its own on the poorer lands, while in the other countries of Europe it is greatly decreasing in importance. In France the same marked diminution is to be noticed. Barley is also on the decline. But oats are steadily increasing in importance, and are taking the land that was formerly given over to rye and barley.

Agriculture is still in a very deplorable condition in many parts of India. The Indian peasant, being unfortunately compelled by necessity to use the droppings of cattle as fuel, and prohibited by religious scruples from utilizing bone for the purposes of manure, is thus deprived of his only available sources of fertilization. The natural result is that the soil's productive power has been seriously impaired. Goat and sheep breeding is suggested by the *Indian Agriculturist* as a remedy, because of their rich manure.

Surface sowing of timothy, millet or clover is condemned by a careful English experimenter, John Spier, after three years' tests. In his experience, timothy did best when sown half an inch deep, Italian rye-grass a quarter to one inch deep, and clover did best when planted three-fourths of an inch deep, in 1887; but the next year being more moist, the clover seed did best at a quarter of an inch, but yet only ten per cent better than when put one and a half inches deep. Much depends upon soil, climate and season.

Frozen milk can not only be transported with ease, but as long as it can be kept frozen will come out perfectly fresh. Experiments in this line showed that in cooking qualities and in yield of cream as well as in other respects, frozen milk corresponded with quite new milk, and butter and cheese could be prepared from it quite as well as from new milk. These results are detailed in a paper by M. Guerin, of Grandvilles, Vosges, before the Agricultural Society of France. It is proposed to try the idea on a large scale by freezing milk in ordinary iron machines.

The grain crops of Germany will be again short in yield, for the third year in succession. The area in these crops has been stimulated by the increase in 1887 in the duties from 71 cents to $1.19 on wheat and rye, 35 to 95 cents on oats, 35 to 53 cents on barley, and 23 to 47 cents on maize, per 220 lbs. These causes have combined to advance the price of rye about 40 per cent, wheat 25 per cent and oats 60 per cent, while the price of barley and maize has also advanced. The price of black bread has advanced in consequence one cent per loaf of four pounds.

A special duty of sixty cents per one hundred pounds has been imposed by France since the first of May on all lard mixed with cotton-seed oil, irrespective of the percentage of such admixture. This is done to discourage the imports of adulterated lard. All lard imported from the United States will be subjected to the Government's examination. This is merely one of the facts that go to prove the desirability of the system of inspection by our own Government and its branding for quality of all our exports, which was proposed in the AMERICAN AGRICULTURIST for January, 1889.

Moss litter and sawdust are becoming so generally used for stabling in England that many of the Lancashire and Cheshire farmers are unable to sell their straw. They recently held a meeting to consider this subject, at which it was admitted that if the present state of affairs continue, straw will be selling at five dollars a ton before the end of next year. Certain landlords and corporations have found it profitable to buy the moss litter and sell their straw, which still further adds to the glut. The farmers have agreed not to buy any manures except where straw was used for bedding.

Comparatively little butter is manufactured in Italy, and the consequence is a large use of the artificial products. These are imported from France, America, Germany, England and the Netherlands. The demand for butter has become so important in Europe, South America, Australia, India, Japan and even China that, with the undersupply of the real article, it is necessary to manufacture something analogous to it. Again, these foreign markets will pay only low prices, so that they don't afford as much of an outlet for the surplus of good American butter as would otherwise be expected.

Hogs are comparatively few in Honduras, although fresh pork sells for 12½ cents per pound and lard for 20 cents per pound. This country affords a considerable market for the hog products of the United States. Bacon and sugar-cured hams sell in Tegucigalpa for 75 cents per pound. The climate and pasturage of Honduras are both favorable to the production of pork, mutton and beef, and the government now offers large inducements to American capitalists to establish ranches and abattoirs. The Armour company of Chicago and a New York syndicate of butchers have already completed contracts to open such establishments on the north coast of Honduras near Caratasca. It is pointed out that either live or dressed meat can be produced in Honduras as cheaply as in the far South American countries, while she is so much nearer to the great Northern and Eastern markets that the business ought to be much more profitable.

## New Publications.

CALIFORNIA FRUITS AND HOW TO GROW THEM. By Edward J. Wickson, A. M. San Francisco: Dewey & Co.

For a long time after the acquisition of its territory by the United States, California was regarded simply as a gold-bearing region. It is a matter of history that a distinguished Senator declared in debate, that he would not give one cent an acre for the agricultural value of California. But the world has learned better since that, and for many years the annual products of her wheat fields, and more especially of her orchards, vineyards, citrus groves and fruit gardens, have been so valuable that the entire output of precious metals seems small by comparison. But the conditions of fruit-growing in California are in many respects so peculiar that experience acquired in the more Eastern States is, to a large extent inapplicable. Various small and able monographs have been published on special points, but it remained for Prof. Wickson to produce a book worthy of the interests involved. The work could not have fallen into better hands. In addition to his own eminent scientific and practical knowledge of the subjects involved, he has availed himself of the experience of hundreds of California fruit-growers. The result is a book broad and comprehensive in its scope, accurate and reliable in its particulars. It embraces the whole subject of fruit-growing in California, and in large measure on the entire Pacific Coast. Soil, climate, preparation, propagation, culture, and preparation for market, are all treated of, and every variety of fruit and nut is specifically included. Diseases, predatory insects and animals, fungi, and climatic dangers receive careful and intelligent attention. The work is a valuable acquisition to the literature of horticulture, and an especial boon to dwellers on the Pacific Coast. Sold by the Orange Judd Co.

HINTS ON HOUSE BUILDING. By Robert Grimshaw. Second and Enlarged Edition. New York: Practical Publishing Co., 21 Park Row.

In no department of what may be called the science of living well, has there been greater activity or progress within the last few years, than in American domestic architecture. In external features it has, since the colonial period, passed through the successive stages of the Greek-temple style, the mansard-roof style, and lastly what has been aptly termed the crazy-quilt style, and at length architects and builders have learned to produce a dwelling-house combining beauty with comfort. But the owner should have some fundamental ideas of what is requisite to make his dwelling what he wants it to be. It is to supply hints of this kind that the little work under notice was written. The author is not an architeet, and makes no attempt at any professional efforts. His hints are general, and expressed in pointed, energetic language. The comforts and discomforts of dwelling-houses are clearly pointed out. In the mechanical getting up of the book, there is no attempt at style. Sold by the Orange Judd Co.; price 50c post-paid.

### BRIEF COMMENT.

*The Manual of Indian Agriculture*, by Dr. Short; Madras, Higginbotham & Co; pp. 327. This book is the result of forty years' experience and observation in the culture of the large variety of crops that are grown in India, especially cotton, wheat, tobacco and tropical plants.

*A Catalogue of Wheats*, by H. L. Vilmorin, has just been published by the great seedsmen, Vilmorin, Andrieux & Co., of Paris. This is an enlargement of a similar book published by the elder Vilmorin in 1850, which was recognized as a standard at the time. The new work is in French.

Prof. S. W. Johnson has been engaged for two years on an elaborate revision of his great work, *How Crops Grow*. The revision is now completed, and the publishers (Orange Judd Company) will soon have the book on the market. The book has been entirely re-written, and will be printed from new plates and new type. It will be a great boon to all agricultural students and scientific workers, as the new work embraces the results of all that has been learned in its special field since its publication twenty years ago.

*History of the Wheel and Alliance, and the Impending Revolution*; by W. S. Morgan, Hardy, Ark.; Pp. 788, $2. Book One gives a good account of the rise and progress of two great agricultural organizations in the South and West, which are now uniting as "The Farmers' and Laborers' Union of America." Book Two presents the author's views as to the paramount necessity of the abolition of national banks, the issue of all money as greenbacks, government control of railways, the abolition of trusts and the prevention of gambling in the necessaries of life. The book needs careful editing to reduce its unnecessary bulk. It is a forcible presentation of ideas that are making considerable progress, and that merit careful attention.

### CATALOGUES ACKNOWLEDGED.

P. J. BERCKMANS, Augusta, Ga.: Catalogues of fruit and ornamental trees, evergreens, roses and other ornamental plants. This firm makes a specialty of plants and trees adapted for Florida and the coast belt of the Southern States. A more complete assortment or better-grown stock cannot be found anywhere.

JOHNSON & STOKES, Philadelphia, Pa.: Fall catalogue of seed wheat, flowering bulbs, and other plants for fall planting; also, a quarterly wholesale price-list of seeds.

MOSELY & PRITCHARD MFG. CO., Clinton, Iowa: Illustrated price-list of Mosely & Pritchard Occident Creamery apparatus and machinery.

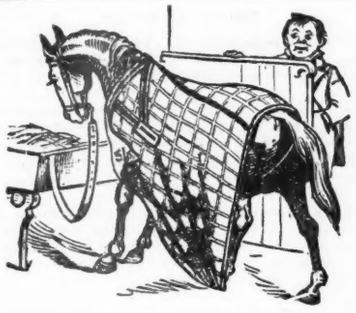
OHIO BUILDING CO. Columbus, Ohio: Circular of building material furnished ready to be put together.

SCHLEGEL & FOTTLER, Boston, Mass: Illustrated catalogue of bulbs, roots, plants, etc., for outdoor planting and for forcing.

SIEBRECHT & WADLEY, New Rochelle, N. Y.: Catalogue of new, rare, and valuable plants. This is one of the most elegant catalogues of the kind that has come to our notice. It is arranged under an entirely new system, which facilitates the finding of any kind of plants in a moment. The work is liberally illustrated, and worthy of a place in every horticultural library.

JAMES M. THORBURN & CO., 15 John street, New York: Descriptive and illustrated catalogue of bulbs and flowering roots, giving descriptions of hyacinths, tulips, narcissus, lilies, etc., with cultural directions, also seeds of hardy flowering plants.

VILMORIN ANDRIEUX & CO., Paris, France: Catalogue of flowering bulbs and strawberry plants. A very rich and complete list of everything in this line; also, price list of vegetable and flower seeds for autumn sowing.



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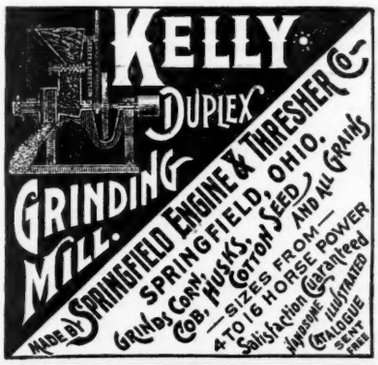

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# MATTERS OF BUSINESS.

## Yield of Crops and Probable Prices.

**Corn** is our greatest crop this season, as usual, but it is fully a week late. Its average condition fell off 2.8 points during August, being reported as 91 on Sept. 10, by the United States Department of Agriculture. Cool and wet weather affected the crop on the Atlantic coast. On the Gulf coast there was some excess of moisture until June and July, with drought in some districts since, and in others seasonable showers, resulting in crops expressed by medium to high averages. In the Ohio Valley and Lake region there has been a marked reduction of condition during the last month, from drought following the heavy rains of early summer. In Ohio and Indiana there was previous injury of bottom land crops by floods. In Michigan and Wisconsin, the effects of drought and other influences are most injurious. There is complaint of drought west of the Mississippi, too late in the season for serious reduction. West of the Missouri conditions have been more favorable than in any part of the country, and the crop is very large. The September condition in the seven corn surplus States are: Ohio 81, a loss of six points; Indiana 81, loss six points; Illinois 87, loss three points; Iowa 94, loss six points; Missouri 93, loss three points; Kansas 98, loss four points; Nebraska 96, loss five points; average 90, against the August average of 95. This is a very serious injury, which we estimate reduces the crop in these States by 64,336,075 bushels. The reduction in the rest of the country we place at 23,858,290 bushels. This makes the probable corn crop of 1889 about 1,925,0( 0,000, or about fifty million bushels less than the 1888 crop; but more than three hundred million bushels in excess of the average crop for the past eight years. About three per cent of last year's crop was exported, but values depend principally upon the market for beef and pork. Consequently, slightly better prices than last year should be obtained. The Corn crops, prices and exports of late years compare as follows:

| YEAR. | CROP. bush. | EXPORTS.* bush. | FARM. PRICE† cts. per bush. | EXPT PRICE‡ |
|---|---|---|---|---|
| 1888 | 1,987,790,000 | 69,592,931 | 34.1 | 55 |
| 1887 | 1,456,161,000 | 25,325,000 | 44.4 | 48 |
| 1886 | 1,665,441,000 | 41,849,000 | 36.6 | 49.8 |
| 1885 | 1,936,176,000 | 65,120,000 | 32.8 | 54 |
| 1884 | 1,795,528 000 | 52,500,000 | 35.7 | 61.1 |
| 1883 | 1,551,066,895 | 46,258,966 | 42.4 | 68.4 |
| 1882 | 1,617,025,100 | 40,586,825 | 48.4 | 66.8 |
| 1881 | 1,194,916,000 | 43,174,915 | 63.6 | 55.2 |
| 1880 | 1,717,434,543 | 91,908,175 | 39.6 | 54.3 |

*The exports are for the fiscal year ended the following June 30, thus showing how much of each year's production went abroad. †The farm prices are the average of the prices received by the farmers in the principal Corn States in December. ‡Average of the price paid during the year at New York for Corn for export.

**Wheat.**—The reduction in Winter Wheat, as compared with the July report, is in New York, Pennsylvania, Michigan, California, and in some of the Southern States. The quality of Western grain, as shown by its grading, is comparatively poor, and will affect the weight and intrinsic value. The condition of Spring Wheat is reported higher than in August in the northern portion of the belt, and slightly lower in Iowa and Nebraska, as follows: Wisconsin, 93; Minnesota, 96; Iowa, 93; Nebraska, 88; Dakota, 63. The local rates of yield in Dakota are extremely variable, ranging from one to 20 bushels per acre. We assume, therefore, that the Spring Wheat crop will be 156,125,000 bushels, or about six million bushels in excess of our estimate in the AMERICAN AGRICULTURIST for September. This will swell the total crop to probably five hundred million bushels. But, in spite of this much larger crop than usual, prospects for fair prices were never better at this season. Europe usually imports about two hundred million bushels. The United States furnishes 50 to 60 per cent, the rest of the supply coming principally from Russia and India. All official reports confirm the fact that India's crop is fully twenty-two million bushels short of last year's production, so that she will have only about ten millions for export, against twenty-five to forty million bushels in previous years. The Argentine Republic and Australasia have no surplus for export of consequence. Again, there is a big shortage in Russia, and it is believed that she can furnish only half her usual quantity for export. In other words, the United States must supply the forty to sixty million bushels which India and Russia lack. More than all this, however, the AMERICAN AGRICULTURIST received official advices from the International Grain Congress, held at Vienna the last week in August, proving beyond question an extraordinary shortage throughout all Europe, as well as Russia. This means that Europe will require from thirty to fifty million bushels more than usual during the coming year. Non-official and speculative estimates have placed the extra demand much higher. It seems, therefore, that this extra amount to supply the increased European deficiency must come largely from the United States, in addition to what we must send abroad to make up for the Russian and Indian shortage. Farmers are learning these important facts, and many of them are inclined to hold their Wheat for $1 per bushel. The large falling-off in our exports of Wheat during the fiscal year ended June 30, 1889, had caused some uneasiness, but the foreign situation is so different from the full crops of one year ago, that confidence in a big export demand is fully restored. These comparisons are important in this connection, flour exports being included in their wheat equivalent; the first table shows the United States crops and the amount exported of each; the second shows the exports of our principal competitors whose supply this season is so short.

| YEAR. | UNITED STATES. CROP. bush. | EXPORTS. bush. | FARM PRICE. | EXPT VAL. |
|---|---|---|---|---|
| 1888 | 445,868,000 | 90,163,209 | 92 | |
| 1887 | 456,329,000 | 119,625,000 | 68 | 85 |
| 1886 | 457,218,000 | 153,803,000 | 68 | 89 |
| 1885 | 357,112,000 | 94,595,000 | 77 | 87 |

| | RUSSIAN EXPORTS. | INDIAN EXPORTS. |
|---|---|---|
| 1887 | 81,085,824 | 25,271,249 |
| 1886 | 51,513,600 | 41,558,240 |
| 1885 | 91,754,000 | 39,312,969 |

**Cotton** is comparatively late, according to the Department's September report. Too abundant moisture is generally announced, producing a rank weed, and retarding the development of bolls. Rust has appeared quite generally on sandy uplands. The grey soils of the Atlantic coast show most rust; the red lands and heavy soils have been less affected or entirely exempt. Drought has not been reported except in the light pine lands of Mississippi, similar soils in Louisiana, and in a considerable part of Texas. In these districts there was abundant moisture until June or July. There has been considerable dropping of forms and of young bolls, in the areas most affected by extremes of moisture and temperature. The plants are still growing and blooming, in most locations, though in light soils the bolls are small and not developing rapidly. The general average of condition is 86.6, against 89.3 last month, and 83.8 in September of last year. The State averages are as follows: Virginia, 62; North Carolina, 79; South Carolina, 87; Georgia, 90; Florida, 94; Alabama, 91; Mississippi, 88; Louisiana, 91; Texas, 81; Arkansas, 90; Tennessee, 84. The presence of the caterpillar and boll worm is reported in all the Gulf States and in Arkansas. The first brood of the former has webbed up, and preparations are generally made for a vigorous use of Paris green and London purple, which have been very effective with the first generation. The damage has been slight east of the Mississippi, and not generally serious further west, with a few exceptions. Correspondents recognize the large value in the present crop of the factors of good autumn weather and late killing frosts, in determining the aggregate of production. If these factors last until the crop is all gathered, we expect 7,000,000 bales at least. Planters are combining to get twelve cents per pound, their aim being to hold back the cotton until that price is offered. The exports for the year ended Aug. 31 were 4,811,163 bales, against 4,682,828 bales in the previous year.

**Cattle and Hogs.**—Fully one per cent more stock hogs are available for fattening this fall than usual, but their condition is placed at 98, 100 representing a full average. This slight increase in number is due to the advanced price of hogs and hog products. This will make a great demand for our big corn crop. The beef market is also improving, although prices have been very low for the past few years. This has resulted in a large contraction of the stock business, and the AMERICAN AGRICULTURIST believes that the available cattle in the country are much less than for several years. Department of Agriculture authorities estimate that there were last year only 537 cattle (excluding milch cows) per 1,000 of population, against 550 in 1884. The severe depression in the business has probably reduced this number to about 500 to-day. The Bureau of Animal Industry well says that the future tendency of prices with cattle will probably be to advance on account of the improbability of increasing the stock as rapidly as population is augmenting. It points out that this advance will doubtless be slow and uncertain for a number of years, but the active export trade in beef cattle, which is now assuming such large proportions (elsewhere illustrated in the present issue), will help the market not a little.

**Oats and Other Grains.**—The condition of Oats was reduced to 90 against 92.3 the 1st of August. This report is practically conclusive, as the crop is now harvested. It reduces the yield to 714,353,090, against the 731,170,000 bushels we anticipated by the August report. Only a bare fraction of this crop is exported, and prices will depend entirely upon domestic markets. In view of a larger crop than ever before, values must be reasonable. The condition of rye is placed at 91.6, against 95.4 in August; barley 88.9, against 90 6; buckwheat 92.1, against 95.2. Beans will be short, and seed peas will command large prices.

**Other Crops.**—Potatoes have not improved. The rot in the Eastern States was partly arrested by warm weather the first two weeks in September, but it continued in the Central and Western States. The total shortage will be fully as great as we estimated in the AMERICAN AGRICULTURIST for Septemper. A medium crop of onions is confirmed, and good prices are expected after the fall glut is worked off. Heavy Leaf tobacco is estimated by the Department as 76.2 in condition, against 84.4 in August, but a fine crop of Cigar Leaf tobacco has been harvested.

**Fruits.**—The shortage in the principal apple-growing regions of the United States and Canadas is confirmed, while the small crop in Europe and the increasing popularity of American fruit there will make the export demand greater than ever. Cranberries are also yielding lightly, the production of the United States being estimated at about 400,000 bushels, half a million bushels being the average. Peaches have yielded highly in the great peach sections of the Middle States, but were a big crop in Georgia and California. Grapes are light in Ohio.

## Hints for Profit.

**Poultry Supplies.**—Every one who keeps poultry will do well to send to C. H. Dempwolf & Co., York, Pa., for their price-list of poultry supplies.

**A Salary** with expenses paid will come handy to any one who is now out of employment, especially where no previous experience is required to get the position. If you want a position, see advertisement on Page 516, "A Chance to Make Money."

**Eighty Named Varieties of Tomatoes** were recently on exhibition at the seed warehouse of J. M. Thorburn & Co., New York. It was a most interesting sight, but we must confess our inability to pick out the best among so much excellence.

**Cutting Silage and Dry Feed.**—Every farmer who has a silo must needs have a good cutter to prepare the green crop. If he cures his fodder and feeds it dry, he still needs a good cutter, for economy. One of the best is the Belle City Feed-Cutter. It is made in Racine, Wisconsin, by the Belle City Manufacturing Co., and is so well known that any commendation would be like painting the lily. Send to the above address for a free circular.

**Iron and Steel Roofing.**—The best material for roofs is a matter for serious consideration to every one who builds. Shingles decay; slate is heavy and liable to crack by frost; tiles are still heavier; and tar roofs are not readily adaptable to rural structures. But patent iron and steel roofing, like that made by the Garry Iron Roofing Co., of Cleveland, Ohio, is free from all these objections; is fire-proof, practically indestructible, and in the end quite cheap.

**Feed-Mills for the Farm.**—One of the cheapest, reliable and effective farm feed-mills is the Star, made by the Star Manufacturing Co., New Lexington, Ohio. It is simple in construction and especially adapted for use on the farm; and is furnished with or without power. With a double set of grinders it does all kinds of work, from corn-and-cob grinding to making fine meal. The mills are so reasonable in price that every thrifty farmer, with grinding to do, can afford one.

**Manure-Spreaders.**—J. H. Lee, Jefferson Co., Indiana: The first practical manure-spreader to be perfected was the Kemp spreader, manufactured by the Kemp & Burpee Co., of Syracuse, N. Y., by whom it has now been advertised in the AMERICAN AGRICULTURIST. This spreader, with the latest improvements, is an exceedingly practical machine and indispensable on all large farms. The draft is comparatively easy. The Empire spreader is another excellent machine; it is made by the Empire Spreader Co., Phœnix, N. Y.

**Haying in Nebraska.**—I was much interested in the article on that big hay farm in Georgia of 1,600 acres, from which 200 car-loads of baled hay have been shipped annually for the last two years by the Pawnee Hay Co. The prices are so low for hay in the Missouri towns and cities that the company cannot make much money. I have been reading the AMERICAN AGRICULTURIST for more than twenty years, and it interests me even out here in Southeast Nebraska.

D. E. W. JONES, Pawnee Co., Neb.

**The Dressed-Beef Trust.**—The Senate committee appointed to investigate the condition of the beef industry has lately been conducting open meetings at Chicago, Kansas City, St. Louis, and other points. The testimony adduced demonstrates the existence of the alleged combination of Chicago packers to control prices. Senator Vest of Missouri, chairman of the committee, is determined to probe the matter to the bottom, and, if possible, devise a remedy. It is significant that Armour and other Chicagoans alleged to be in the combine refused to appear before the committee.

**A Well-Dressed Lady.**—The French say that a lady to be well dressed must above all things be "*bien gautee et bien chaussée*,"—well-gloved and well-shod. With those requisites properly attended to, every lady, tall or short, blond or brunette, looks well in a black silk dress. There is no better material in the world for this purpose than the Chaffee dress silks, made by O. S. Chaffee & Son, Mansfield Center, Connecticut. They include light and heavy fabrics, all of unexcelled excellence. Upon receipt of a two-cent stamp, they send free samples, with prices, from which to order, and deliver all goods with charges prepaid.

**Harvest Excursions.**—The Chicago & Northwestern Railway offers exceptional opportunities for an inspection of the cheap lands and growing business centers of Iowa, Minnesota, Nebraska, Wyoming, North and South Dakota, Colorado, and the far West and Northwest, by a series of Harvest Excursions, for which tickets will be sold at half rates, or one fare for the round trip. Excursions leave Chicago August 6th and 20th, September 10th and 24th, and October 8th. For full particulars apply to any ticket agent, or address E. P. Wilson, General Passenger Agent Chicago & Northwestern Railway, Chicago, Illinois.

**American Machinery in Paris.**—The Paris *Figaro* in its notes of the great Exposition says: "The hay- and

[*To Page* 512.]

# Rheumatism

"Having been troubled with rheumatism at the knee and foot for five years, I was almost unable to get around, and was very often confined to my bed for weeks at a time. I used only one bottle of Paine's Celery Compound, and was perfectly cured. I can now jump around, and feel as lively as a boy." FRANK CAROLI, Eureka, Nevada.

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has performed other cures as marvelous as this—copies of letters sent to any address. Pleasant to take, does not disturb but aids digestion, and entirely vegetable, a child can use it. It cures even those whom doctors call incurable. What's the use of suffering with rheumatism?

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FARMER.—Well, I'll try one. My neighbors all use them, and are satisfied. I tried another kind, and "Old Domby's" shoulders got worse.

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## Matters of Business.

[*From Page* 510]

straw-press of Messrs. Whitman, of St. Louis (America), of which a brilliant trial was recently made at Noisiel, obtained the first prize at the International fair of Turin. It was exhibited in competition with all the other presses known so far. The distinction it achieved in Italy presages its success in the trial at Noisiel." It would appear from other notes that no American agricultural machinery attracted more favorable attention than the Whitman Hay- and Straw-Presses.

**Harnessing the Winds.**—In all man's triumphs over the forces of Nature, nothing is more wonderful than making the viewless winds do his work. One of the most improved devices for this purpose is the National Wind Engine, manufactured by the Steel Pulley and Machine Works, Indianapolis, Ind. It is light and compact in structure, being all of iron except the sails; when in gear, the broad surface of the sails catches the full force of the wind, with no back reaction. When out of gear, the sails present only their thin edges to the wind, enabling it to withstand safely the most severe storms.

**Where To Get Good Drainage Tile.**—The largest manufacturers of tile for drainage purposes in the country are Jackson Brothers of the New York drain tile and and pipe works at Albany, N. Y., whose card is a permanent feature in our advertising columns. Not only do they make all kinds of ordinary brick tile, including the round and sole tile, collars, etc., but they are wholesale agents for the celebrated standard Akron, salt-glazed sewer pipe, which is said to be unequaled in quality. As they do a large business, Jackson Brothers can furnish tile and glazed sewer pipe of all descriptions at low prices.

**Homes in the Sunny South.**—While the feverish rush to the wilds of Oklahoma was in progress, millions of acres of choice lands in the South were and are inviting purchasers. The Alabama Land and Development Company, of Mobile, Alabama, has the control of a million acres of lands of the Mobile and Ohio railroad, which are well worthy of attention. They lie in Alabama and Mississippi, and include all varieties of pine timber land, rich, alluvial bottom, and choice upland farming land. The climate and all other conditions combine to make these lands desirable. J. N. Eberle, 106 North 4th street, St. Louis, is the Land and Immigration agent of the company.

**The Farmers' and Laborers' Union of America,** a proposed organization that was outlined in the AMERICAN AGRICULTURIST for July, will doubtless be consummated. It is to be formed by the amalgamation of the National Farmers' Alliance and Co-operative Union of America, the National Agricultural Wheel, National Farmers' Alliance of the Northwest, and the Farmers' Mutual Benefit Association. The proposed constitution has been adopted by the required three-fourths majority of the State organization. The meeting to perfect the enterprise will be held at St. Louis the first Tuesday in December.

**Bolster Springs.**—Bolster springs are a necessary adjunct to every farm-wagon, at a small cost, that gives all the advantages of an expensive spring backing. For the fruit-grower and dairyman, as well as for the market-gardener, they are indispensable. In the prevention of injury to packages, cans, and baskets, they will soon save their cost. But in this, as in some other manufactures, it is of the greatest importance that every part of it be of the very best material and workmanship. The springs manufactured by the Racine Bolster Spring Co., Racine, Wis., are of this description. They are strictly first-class, and are just what every owner of a wagon wants.

**Closing-Out Sale of Fairlawn Stock.**—During the past fifteen years the Fairlawn breeding farm of Gen. Withers, near Lexington, Ky., has been a sort of Mecca for horsemen. It was the home of Almont, Happy Medium, and other famous sires, whose progeny won their way to the front ranks of American horses. But the recent death of Gen. Withers has led to breaking up the establishment. His widow, as trustee for his ten children, naturally shrinks from the arduous task of keeping up the farm. And so all the stock, comprising 275 head, old and young, will be sold without reserve October 10th to 12th. The sale will be a notable event in American horse history.

**A Farmers' Trust.**—The Arkansas Agricultural Wheel is the latest State organization of farmers to attempt a Farmers' and Laborers' Exchange. Through such exchanges the farmers in several of the Southern States are quite successful in buying together and selling together, thus reducing expenses and getting better value for what they both sell or buy. The New York *Sun* editorially commends the enterprise, and says: "It is a large trust of small capitalists against a small trust of large capitalists, and the former has the better chance. Should it be greatly successful, as it easily may be, since it can probably command from the members of the Wheel a volume of business from the start, it would become a powerful monopoly, an immense combination, such as the members of the Wheel would now denounce. Among capitalists and workingmen, farmers and manufacturers, in all branches of industry, the rule now is combination. It results from an irresistible tendency which it is idle to denounce. The farmers of Arkansas have combined, as they have a right to do, to cut down their expenses and increase their profits. The Grangers of Iowa, on the other hand, are attacking combinations and trusts instead of imitating them. The Arkansas men have the longer heads."

**"The Farmers' Federation**—Of the Mississippi Valley" is the large name of a small association which has called the wheat-growers of the Mississippi valley to meet in St. Louis on October 23d. Its proposed capital is twenty million dollars, of which only five million can be put on the market and sold. This stock farmers and local shippers can buy at ten cents on the dollar, or earn the stock in shipments to the company. The rest is to be held in trust for the stockholders. The Federation proposes no change in the rates of commission at present charged for selling grain and live-stock, but proposes to reduce the number of the commission merchants 90 per cent, and by retaining 10 per cent as salaried agents, save its members nine million dollars annually. All stockholders are pledged to consign their grain and stock to the Federation's agents, thus centralizing the business and defying competition. The projector believes the society will soon control the stock yards and grain-elevators to such an extent as to have a monopoly in the commission business, and thus be able to control shipments and regulate the price of farm-products, so that farmers can get a dollar a bushel for wheat. It is needless to add that this scheme meets with little favor among the conservative farmers of the West. The officers of the Federation are: President, Walter N. Allen; Secretary, J. P. Limeburner; Treasurer, J. R. Mulvans; Directors, P. N. Gish, C. E. Diehl and Smith Stummel; headquarters, Topeka, Kansas.


## Why Don't

You take Hood's Sarsaparilla, if you have impure blood, have lost your appetite, have that tired feeling or are troubled by sick headache, dyspepsia or biliousness. It has accomplished wonders for thousands of afflicted people, and, if given a fair trial, is reasonably certain to do you good.

"I have been troubled a great deal with headache, had no appetite, no strength, and felt as mean as any one could, and be about my work. Since taking Hood's Sarsaparilla I have not had the headache, my food has relished, and seemed to do me good, and I have felt myself growing stronger every day." M. A. STEINMAN, 19 Grand Avenue, Grand Rapids, Mich.

**Hood's Sarsaparilla**

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**PEACH TREES.**—Superior quality, one year old. All leading varieties. Yellows are not known here. Catalogues free.

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The largest nursery of Fruit Trees in the world. EXCLUSIVELY WHOLESALE. To Nurserymen, Dealers, and Market Orchardists IMMENSE STOCKS of Pears, Plums, Cherries, Peaches, Apricots, Nectarines, Almonds and Quinces. **Varieties suitable to all latitudes.** SPECIALTIES: Lawson, Kieffer, Le Conte, Early Harvest and Seckel Pears; Russian Pears, including Bessemianka, Gakovska, and No. 1401; Russian Apricots and Cherries; De Soto, Wolf, P. Simoni, Kelsey, Botan and Blood Plums; Peen To and Honey Peaches and their improved seedlings. Other new and famous sorts. **Quick transit, in through cars, free of freight charges,** to *St. Louis, Mo., Cincinnati, O., Rochester, N. Y., Philadelphia, Pa., Dallas, Tex., Jacksonville, Fla.* We can refer to customers in every State and Territory. Prices very low. Price List free. Address **W. F. HEIKES, Manager, Huntsville, Alabama.**

## Prize Crop Competition.

**A Harvest Report.**—The AMERICAN AGRICULTURIST reserved the right to be present in person or by proxy at the harvesting of each prize crop, besides which the rules require three disinterested witnesses to superintend the harvesting. Of course we are unable to attend all these harvestings, but when unable to be present a delegate is appointed to represent the AMERICAN AGRICULTURIST at the harvesting. It is needless to say that these delegates are men of standing and integrity, and that they will be as active and vigilant in securing a fair and honest harvest and measurement of the contest crop as though we were personally present. The reports of our representatives are sent to us, while most of them also appear in the local papers of the contestant's vicinity. Thus, Mr. A. I. McGranahan, who represented us at the harvesting of the contest acre of oats grown by Mr. Riley T. Scott, of Yellowstone, Wis., reports in the Darlington (Wis.) *Republican* of August 16:

In compliance with a request of the AMERICAN AGRICULTURIST, Idesire to report to you the result of harvesting one measured acre of oats on the farm of my neighbor, Mr. Riley T. Scott, who is competing for the AMERICAN AGRICULTURIST prize of $500 in gold. The crop was considered ripe yesterday (Monday the 5th inst.), and, in company with Mr. Thomas O. Williams, our practical surveyor, we repaired to the contest plat about 11 A. M. We found the workmen had a line stretched clean around the acre on posts at corners of the original survey of the plat, and were busy with scythes, sickles and knives trimming exactly to the line. Before this work was finished, dinner was announced. After a hearty repast, all hands returned to the field and finished clearing a strip ten feet wide around the acre and exactly to the line. Our surveyor then took his instruments to re-survey the ground. After proving the original survey to be correct, the line was wound into a ball and the harvesting commenced. The work was done by a Champion binder, and it did splendid work. The grain was lodged some on the south side of the plat, so I had the men follow around with straight sticks to raise the lodged portion and throw heads that lopped back over onto the standing grain. Mr. Fred B. Jager manipulated the machine and I followed with a stick to straighten straw on the canvas of the platform until the cutting was finished. A boy was also required to pull the bundles out of the binder. The bundles were carried into dozens and then shocked, the entire harvest being finished by 5 P. M. The acre yielded sixty-five dozen and seven bundles, made with a band twenty-seven and one-half inches long in the clear. The oats stood about five and one-half feet high on the level, and were cut close to the ground. We intend to weigh the straw. I will also see that the stacking and threshing are properly and honestly done, for we all have a curiosity to know how much oats can be grown on an exact acre. I will also report to you again. There were present at the entire harvesting, myself, Messrs. Fred B. Jager, Thomas O. Williams, Benjamin G. Scott, Harvey Harris and the contestant. Others were also present.

A. I. MCGRANAHAN.

**The Reports Our Property.**—The reports of contestants in this competition are exclusively the property of the AMERICAN AGRICULTURIST. They will be carefully condensed and the main facts printed in this magazine during the ensuing year. We have no objections to contestants or witnesses at the harvesting giving a brief report of the crop and yield to the local papers or weekly agricultural press, but such reports should not go into the method pursued to raise the crop. This important information is exclusively our property, and will appear only in the columns of the AMERICAN AGRICULTURIST for 1890. We are also desirous that no partial statements of methods be published which will be likely to be misleading in character. We shall make great efforts to present the results of the contest for each crop in a thoroughly-studied and comprehensive way, so as to bring out the essential facts in all their bearings. It is this complete, carefully-prepared statement that will be of such great value and absorbing interest to farmers everywhere.

**Other Notes.**—The reports of Wheat, Oat, and Potato harvests are now coming in rapidly. The contestants' books of reports, so far as received, contain very intelligent answers to the questions, and promise to be a veritable mine of information. The blight and rot has discouraged quite a number of contestants for the potato prize in the Eastern States, a few of whom have withdrawn; but most of them have persevered pluckily, and will send in their reports—for many points of value can be drawn from unsuccessful as well as from successful experience. A few replies and suggestions may be quoted, as follows:

I do not see the necessity of bothering the AMERICAN AGRICULTURIST with questions about the prize crops. Your pamphlet contains a very clear and concise statement of the conditions that must be complied with, and anyone following the directions therein given cannot possibly go wrong. FRED. S. WIGGIN, Aroostook Co., Me.

My acre of potatoes would have flourished under a drought better than it has stood the present rainy season. It does not seem to me, from what little I have examined thus far (Aug. 6), that my crop can possibly exceed 300 bushels, and is likely to fall quite a good deal below that quantity—certainly if decay is prevalent. I would decline to go further in the contest, but I know that we are to learn from ill-success as much or more than from success. I shall state the circumstances that have seemed to me against a successful crop. Some I could not control; others I might have done could I have foreseen them.

S. J. NETTLETON, Litchfield Co., Ct.

Here is something with the right ring to it from Wisconsin! In describing the recent harvesting of his prize oat crop, Mr. R. T. Scott, of Yellowstone, writes: "Whether we obtain *any* premium or not, the work shall be done *honestly*, and in accordance with your printed instructions." We hope this is the spirit of all our contestants. No prize will be dishonestly won if the AMERICAN AGRICULTURIST knows it.

E. R. T., Waterbury, Vt.: We don't mean to make any new rule about the harvesting. Under Rule 5 the witnesses are instructed to exclude all plants that come outside the exact limits of the contest acre as defined by a line drawn from the surveyor's stakes. The dimensions of the acre so measured the witnesses must find to agree with the surveyor's certificate, for if it fails to so agree, fraud is proven, and the witnesses will correct it by taking the crop only from the acre as surveyed.

**Ablest and Most Practical.**—The AMERICAN AGRICULTURIST is beyond doubt the best agricultural journal published. I recently had an opportunity to compare it with some twenty-five prominent agricultural journals, and, after a score of hours spent in comparison, I unhesitatingly pronounce it the most practical, original, seasonable, and able agricultural journal that I have ever received. HUGH E. TWEED, Ripley, O.

**What Mr. P. C. Hiller says of our "Murray" $55.95 Buggies.**

CONESTOGA, LAN. CO. PA., August 7, 1889.

*To the Wilber H. Murray Manufacturing Co.;*

GENTS:—The buggy I ordered from you arrived in good condition, and is very satisfactory. Every one who has examined it pronounces it the best for the money ever brought to our county. I expect to sell a few of them for you in the near future. Yours truly, P. C. HILLER.

**Sick Headache**

IS a complaint from which many suffer and few are entirely free. Its cause is indigestion and a sluggish liver, the cure for which is readily found in the use of **Ayer's Pills.**

"I have found that for sick headache, caused by a disordered condition of the stomach, Ayer's Pills are the most reliable remedy."—Samuel C. Bradburn, Worthington, Mass.

"After the use of Ayer's Pills for many years, in my practice and family, I am justified in saying that they are an excellent cathartic and liver medicine—sustaining all the claims made for them."—W. A. Westfall, M. D., V. P. Austin & N. W. Railway Co., Burnet, Texas.

"Ayer's Pills are the best medicine known to me for regulating the bowels, and for all diseases caused by a disordered stomach and liver. I suffered for over three years from headache, indigestion, and constipation. I had no appetite and was weak and nervous most of the time. By using three boxes of Ayer's Pills, and at the same time dieting myself, I was completely cured."—Philip Lockwood, Topeka, Kansas.

"I was troubled for years with indigestion, constipation, and headache. A few boxes of Ayer's Pills, used in small daily doses, restored me to health. They are prompt and effective."—W. H. Strout, Meadville, Pa.

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Dr. J. C. Ayer & Co., Lowell, Mass.

Sold by all Druggists and Dealers in Medicine.

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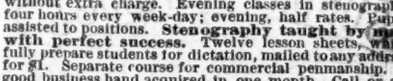
OHIO NORMAL UNIVERSITY ADA, OHIO.—THOROUGH, ECONOMICAL, PRACTICAL. Thirteen departments sustained; thirty-one experienced teachers employed. Students enter at any time and find classes suited to their state of advancement. No vacation except holiday week. Extensive and well selected library. Good board, well-furnished room & tuition, 10 weeks for $28.00; forty weeks for $100—49 weeks for $118. Room in private families. Text books can be rented at minimum rates. First fall term begins August 13th, 1889. Send for Catalogue. Address H. S. LEHR, A. M. President. Mention this paper.

SHORT-HAND SELF TAUGHT Send for Catalog of Books and helps for self-instruction by BENN PITMAN and JEROME B. HOWARD, to THE PHONOGRAPHIC INSTITUTE, CINCINNATI, OHIO.



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TELEGRAPHY Learn here and earn good pay. Situations furnished. Write Valentine Bros., Janesville, Wis.

*Get* Clark & Perrin's Home Course of Business Training. All commercial branches taught by mail. Write to Clark's College, Erie, Pa.

NEW YORK COLLEGE of VETERINARY SURGEONS and school of comparative medicine (chartered 1857); session of 1889 and 1890 begins Tuesday, Oct. 1st, 1889. For information and circulars apply to H.D. GILL, V. S., 332 E. 27th St., N. Y.

100 Doses One Dollar

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GRATEFUL--COMFORTING.

**COCOA**

MADE WITH BOILING MILK.

GOLD MEDAL, PARIS, 1878.

W. BAKER & CO.'S

**Breakfast Cocoa**

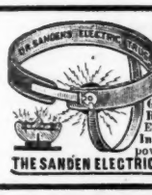
*Is absolutely pure and it is soluble.*

*No Chemicals*

are used in its preparation. It has *more than three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, EASILY DIGESTED, and admirably adapted for invalids as well as persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.



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Can be CURED by DR. SANDEN'S ElectricTRUSS Warranted Best Truss made, to CURE all Curable cases or Refund Money. Only Genuine Electric Truss in World. Perfect Retainer, Gives instant relief, speedy cure Ease and Comfort day and night. This New Invention combines science, durability and power. Price $3 & $5. Illus. pamphlet free.

THE SANDEN ELECTRIC CO., Broadway & 12th St., NEW YORK.

MAGIC LANTERNS and STEREOPTICONS for Public Exhibitions and for Home Amusement. Views illustrating every subject. A very profitable business for a man with small capital. Best apparatus, new views, largest stock. 28 years practical experience. 170-p. catalogue free. GEO. H. PIERCE, 140 S. 11th St., Philadelphia, Pa.

$1.00 4 lb Family Scale, Brass Beam and Scoop. Worth $5. Chicago Scale Co., Chicago, Ill.

### Insurance Which does Not Insure.

No form of fraud is more disastrous and exasperating in its consequences than fraudulent insurance. This is especially true of any scheme which holds forth the promise and expectation of paying certain amounts in case of death or disability. The premiums are kept up from year to year, in many cases at the cost of heavy sacrifices and much self-denial. But the insured and his family submit cheerfully to the hardships, in the belief that a fund is thereby secured in case the insured is stricken down by death or disability. But when the day of sorrow comes, they find too late that they have been leaning on a broken reed. There are many strong, reliable, well-conducted life-insurance companies, certain to redeem to the last farthing every *bona fide* policy, often waiving even the reasonable notice stipulated for in the policy. But the very confidence which has been inspired by the first-class insurance companies is taken advantage of by unprincipled persons to launch various specious schemes under the guise of Mutual Benefit societies which are to say the least, shady and suspicious. By adopting such names rather than that of insurance companies they endeavor to escape the scrutiny of the Insurance Department. One of these in New York city seems to have been constructed from the fragments of a collapsed "Medical Benefit Society." Under its present title it advertises a full list of officers, with headquarters in a prominent business block on Broadway. Inquiry at the ostensible headquarters elicits the information that the "president" of the "society" has desk-room in one of the offices, but is seldom there. Various claims are pending against the "society," but we have no information that any similar ones have ever met with honorable settlement.

### A Bogus Association.

To use the words of Hon. J. S. Woodward, secretary of the New York State Agricultural Society, the so-called "American Agricultural and Dairy Association" is "simply a myth, and not a dairyman or farmer of any reputation gives it countenance or support." And yet one Francis J. Arend, the acting secretary of this alleged association, is sending out the following letter from 74 Cortlandt street, New York city:

DEAR SIR:—The friends of Mr. Joseph H. Reall, president of the American Agricultural and Dairy Association, desire his appointment on the permanent committee of the proposed International Exposition, to represent the agricultural industry, which he has already secured recognition for by Mayor Grant. Mr. Reall would be of great service to the farming and dairy interests of the United States on this committee, which will have the organization of the fair. He has proven his ability to serve them in the past, at the expense of his time, money and business. Will you please address a letter to Hon. Hugh J. Grant, Mayor, New York, requesting Mr. Reall's appointment to represent the agricultural industry on the committee of 100 appointed by him to organize the Exposition at once, as about all the appointments have been made but this. Very Truly Yours,

FRANCIS J. AREND,
Acting Sec. Amer. Agri. and Dairy Association.

This Reall has the most colossal cheek of any man in the country. He worked for the oleomargarine bill in order to advertise his milk separators, and got up his alleged association for the same purpose. His methods were such that the agency for the separators was taken from him by the manufacturers. This association pretends to hold one meeting a year, but in reality exists only in name, the president being this man Reall with his satellite Arend. Mr. Reall's connection with several unsavory mining schemes has been referred to in the Humbug Department of the AMERICAN AGRICULTURIST on several occasions previously, and his operations have also been exposed in the New York *Herald*, the New York *World* and other daily papers, to say nothing of many weekly agricultural journals. His appointment would be an outrage on the agricultural interests.

### "Electro-Magnetic Rods."

R. B. Gibson, Butler Co., Pa., forwards us circulars he has received concerning "Rods for locating mines of gold and silver," or the discovery of buried treasure. The rods do not seem to be the traditional hazel wands, but are "electro-magnetic," charged with some hitherto unknown form of magnetism, for every form now known to science is totally indifferent to gold and silver, however susceptible a needle or magnet may be to iron. One of the circulars under consideration has some "testimonials" signed only by initials without obvious reason. In one of them "M. W. M." says, "I am behind a little, but will forward $10 for that rod." "E. G. R." says: "I have buried coin two feet under ground, and gone straight to it," which no one will feel disposed to dispute, as it is about what any one would naturally do without a rod. "Miss S. P." of Texas writes, "I can take it and find fifty cents anywhere in a hundred yards of me, I can find hidden treasure anywhere." Texas is a very rich State, but this indicates an amount of hidden wealth in her soil hitherto unsuspected. Seriously, the thing is the most apparent kind of a fraud. Even if it were not for the absurd character of the so-called rods, the circulars themselves show it. They do not even assert that the "rods" will accomplish anything, but only that the "maker claims" it. Even with this precaution the address of the advertiser has been rather clumsily battered down to illegibility on the plates from which the circulars were printed. There is a good deal of gullibility in human nature, but it seems strange that such a transparent swindle can be aided by such ambiguous advertising.

### More Gold Bricks.

The "gold-brick" fraud continues to flourish, despite the oft-repeated exposures. The latest victim heard from at this writing is William McKellop, an aged and wealthy farmer, mill-owner and banker, of Shiawassee Co., Michigan. A fellow who called himself Streeter called upon him, and made his acquaintance. After a very convivial time, during which each drank repeatedly to the other's health, a trade was concluded which left Mr. McKellop the possessor of two bright and shining bricks, and the party of the other part left on the first express train for Canada, with $8,000. The bricks proved to be made of brass, thinly gilded. The aged victim, as well as several constables, are anxiously but vainly seeking for Mr. Streeter, who is supposed to have found an asylum with the other exiles under the "meteor flag" which waves over the Dominion.

## Animal Ailments.

**Lampas.**—This is an inflammation of the mucous membrane of the bars or ridges of the roof of the mouth. It is more frequent in young than in old horses. This interferes with mastication of hard and dry food. To remedy the evil, the horse should be fed with ground feed in which a handful of flaxseed meal is added, and over all sufficient hot water is poured to moisten the ration.

**Indigestion.**—This is one of the most frequent disturbances of our artificially-treated domestic animals. It is often caused by too large quantities of improper or unsound food, and especially to young animals, and to horses that do not have sufficient exercise. In cities, young and vigorous horses suffer severely from irregular and too little driving. There is another cause of indigestion and injury: the fast driving soon after feeding. This latter often lays the foundation for heaves or broken wind. Change and lessen the food, and use common sense in driving.

**Lameness in a Horse.**—William F. Erb, Campbell Co., Ky., asks what can be done for a horse that is lame. When he purchased him the foot was inflamed, and resulted in a gathering which opened under the fetlock. Before it opened he consulted a surgeon who said it was "an old sore in the bone." It is unfortunate that the abscess was not detected and opened early, and kept open until thoroughly healed from the bottom. It may have originated in a gravel. As long as there is fever, the foot should be poulticed with bran and flaxseed meal equal parts, made into a thick paste, and applied twice daily. Or, the foot may be kept in a bran mash in a tub. Green food and rest should be persevered in.

**Swelling on the Throat of Cattle.**—A subscriber from Dakota states that he has six or eight cattle out of seventy head that have a swelling about the throat or jaws, and that the same average affects the cattle in his section. They are worse in winter; and these swellings suppurate, open, discharge, and though they heal, yet an unsightly swelling remains to the loss in price, and purchasers do not come to buy such animals. In the first place, cattle should have better winter protection. They should be better fed. And where the least sign of the swellings appear, the drinking water of these should have a dram of Iodide of Potassium dissolved in a bran mash every night. The swellings should be opened as soon as any matter can be discovered, and the whole part painted with Tincture of Iodine daily. Breed only from healthy and hardy stock.

**Mare Out of Sorts.**—G. White, Providence Co., R. I., is at a loss to know what is the matter with a mare he bought two months ago in good condition. Ten days after the purchase she showed loss of flesh, though never out of the stable more than two hours a day. The feed was four quarts of oats and the same quantity of corn meal per day, and plenty of swamp hay. The animal had a cold. It was probably "pink-eye," or a catarrhal fever common among horses when changed from country to village, or city stabling. The food should have been grass in small quantities three times a day, together with a bran-mash containing a handful of whole flaxseed night and morning, and twenty drops of Tincture of Aconite root in four quarts of water, three times a day, for only two or three days. The mare should have been turned loose in a large box-stall, and led out for exercise in clear weather. A thin, or thick blanket according to the weather, should be used. After the subsidence of the fever, scalded oats and bran—two parts bran to one of oats—should be given, in which a tablespoonful of powdered ginger is added to each feed. Corn meal is too heating to be fed to driving horses. It is a fact that oats best answer for horse-feed; and when a couple of quarts of bran is added to each feed the animal system of the horse is kept in more healthy condition. It is seldom that horses have colic when fed with dry oats and bran.

**Grub in the Nose of Sheep.**—A subscriber from Ohio asks: "What is the matter with our sheep? A number of the flock huddle together with their heads turned inward and close to the ground. They are restless, frequently sneeze, and paw the ground up, into which they thrust their noses repeatedly, as though annoyed by flies." This trouble is caused by the sheep gad-fly *Œstris ovis*, which is perseveringly attempting to deposit its eggs in the nose of the sheep, where the warmth and moisture of the mucous membrane soon hatches them, and where they ascend the nasal sinuses to remain till the warm days of the following spring, when they drop upon the ground, in which their larval life is soon changed to the chrysalis and perfect insect. In this state their sole and immediate occupation is reproduction, and perpetuation of their species, without feeding; this accomplished, they die. In the whole course of their parasitic life they annoy the sheep; but, probably more about the time of their descent from the nose. Their presence aggravates colds, which affect sheep more or less during the inclement weather of the fall, winter, and spring. Whatever the annoyance of sheep, their fleeces suffer in proportion to its extent; like the disturbance of milch cows by flies, when the yield of milk is proportionately decreased. The simplest remedy against the grub is a trough of pulverized salt and dust placed in the sheep pasture. Several places spaded up, with a full supply of salt, answer equally well. Coal tar daubed upon the noses is a preventive. It may be freely poured over the dug-up earth and salt, and the sheep will besmear their own noses. If required, by the severity of the annoyance, an injection of an ounce of salt and an equal quantity of coal tar dissolved in a quart of water and thrown up the sheep's nose every night for a few days, will complete the remedy. Tobacco-smoke, tobacco-decoction, snuff, or other narcotics are too dangerous. Sheep are very susceptible to narcotics, which renders their use hazardous.

## TRUTH CRUSHED TO EARTH WILL RISE AGAIN!!!

Probably your dealer or some agent for cheap, shoddy buggies and harness has told you that "he has as good or better buggies and harness than the 'Murray,'" which he will sell you for $15 or $20 more, and will last you longer, and when he tells you this, he knows

## HE LIES!

You wonder why he would tell you a downright lie. Why simply because we will not give him a big per cent to sell our goods, but **SELL DIRECT TO YOU AND YOUR NEIGHBOR** just as cheap as we will him. Everybody should know the

## "MURRAY" BUGGIES AND HARNESS

are the best and cheapest in the market, and there is no getting around it. We know it too from the fact of our steadily increasing trade, and the excellent testimonials we are receiving every day from our patrons. Don't pay big prices to dealers, but buy direct from the manufacturers and save money.

### BUGGIES!

If you value your money, don't buy elsewhere before seeing our catalogue.

**$15.00** for one of the best Road Carts made.

**$55.95** for either a Side Bar or End Spring Murray Buggy.

**$108.00** for our Murray Canopy Top Side Bar Surreys.

**$109.00** for our elegant Jump Seat Surrey.

We're not afraid to show our prices, for we know they can't be beat.

### FIGURES DON'T LIE! LOOK AT THESE.

## !! $66.90 !!

**We're the only Factory in the U. S. that CAN DO THIS!!!**

### HARNESS!

If you want the **BEST AND CHEAPEST** buy of us.

**$5.95** for our No. 1 Murray Single Buggy Harness.

**$9.85** for our No. 2 Murray Single Buggy Harness.

**$10.95** for our No. 3 Murray Single Buggy Harness.

**$15.20** for our No. 4 Murray Double Buggy Harness.

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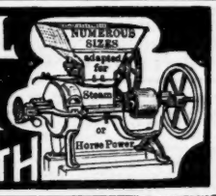


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## The Outlook on Long Island.

As regards the agricultural outlook of Suffolk county, the situation is by no means flattering, and in some sections very discouraging; it is particularly so on the south side, easterly from Bridgehampton. In that section the potato crop is suffering badly from rot, and would be, if harvested now, probably about half an average yield; should the rot continue, it is difficult to say what the loss would be; estimates vary; some farmers say one-quarter of an average crop; others, one-third. At the best, the potato crop will not more than pay the actual expenses of growing, without any remuneration for the owner's labor. The hay crop, that promised so well in June, was gathered under difficulties; very much of it in bad condition; some wholly unsalable; so that one-half an average yield, secured in good condition, would have been more profitable than what is now secured. The corn has made an enormous growth; but, without a generous supply of sun and heat, the yield will be light. All other crops are relatively poor.

On the northern side, taking Mattituck as a center, the prospect, as a whole, is better, but far from being satisfactory. The potato crop has suffered badly from blight, probably to the extent of one-third. As yet, there has been seen but little rot, but it is to be feared, as blight and rot are, apparently, cause and effect. Dry and cool weather might prevent a loss. The growth of vines has rarely been equalled, but not sufficient heat to mature the crop. The farmers in this section always want a dry season; then they are usually sure of success. The cauliflower crop is looking bad; the present indications are that less than half a crop will be secured. The wet weather brought the plants on too rapidly, and they were long-drawn and soft. Then, the ground could not be got in suitable condition to receive them until they were too large; the result was, that when put out they received a check in growth which amounted to a rest; so that very many plants formed a premature head, which is worthless. Many others of the plants formed short, thick stems, refusing to make a healthy growth.

The writer has carefully inspected many fields, and noticed these conditions everywhere present. The cabbage-seed crop promised remarkably well early in the season, but could not perfect a growth because of the rainy weather; besides, many of the farmers lost fully half their crop by shelling out before it was dry enough to thrash, after cutting. There is not more than one-third of an average yield. The hay, corn, and miscellaneous crops have shared the same fate as those on the south side, so that every branch of our industry has suffered from one-fourth to one-half the usual yield, which will prevent any increase of wealth or improvement on the farm this season.

C. L. ALLEN, Suffolk Co., N. Y.

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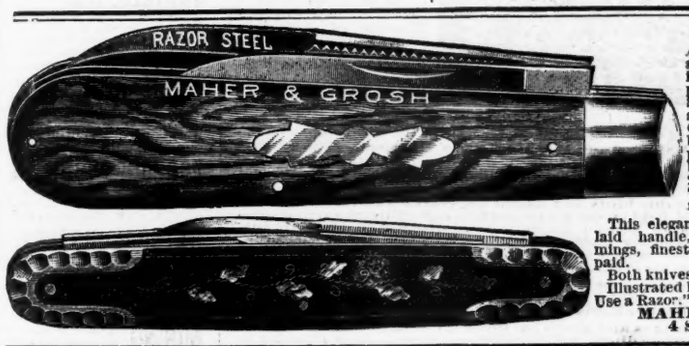


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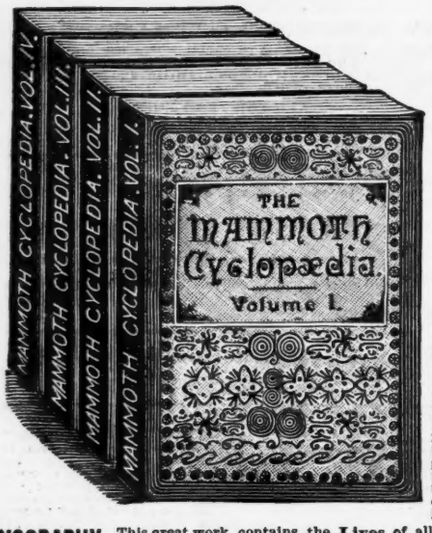


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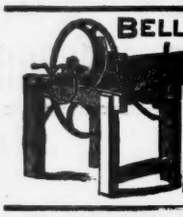

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